

Ontario Hydro

DRAFT OF FINAL PROPOSAL FOR
BRUCE GENERATING STATION B

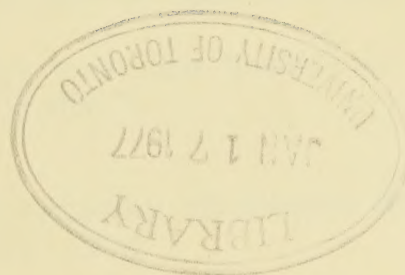
DRAFT OF FINAL PROPOSAL FOR
BRUCE HEAVY WATER PLANTS B, C AND D

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DRAFT FINAL PROPOSAL

Government
Publications

FOR

BRUCE GENERATING STATION B

CONTENTS

- 1.0 PROPOSAL FOR BRUCE GENERATING STATION B
 - 1.1 Introduction
 - 1.2 Summary
 - 1.3 Request for Approval
 - 1.4 The Need for New Generation
 - 1.4.1 Forecast of Load Growth
 - 1.4.2 Reliability of Electrical Supply
 - 1.4.2.1 Components of Reliability
 - 1.4.2.2 Factors Affecting Reliability
 - 1.4.2.3 Future Reliability of Electrical Supply
 - 1.4.3 Additional Generation Required
 - 1.5 The Consideration of Alternatives
 - 1.5.1 The Alternative of Not Providing Generation
 - 1.5.2 Alternative Sources of Additional Generation
1977-1982
 - 1.5.3 Alternatives for Station Location
 - 1.6 Project Capital Costs
- 2.0 ERRATA FOR THE "PRELIMINARY PROPOSAL FOR BRUCE GS B"
PUBLISHED IN FEBRUARY 1974

1.0 PROPOSAL FOR BRUCE GENERATING STATION

1.1 INTRODUCTION

This document contains the request by Ontario Hydro for approval by the Provincial Government of its plan to construct and operate a 3200 MWe nuclear generating station at the Bruce Nuclear Power Development (BNPD). This draft final proposal also contains a summary of the public participation program and the responses received from the interested ministries at this time.

The environmental assessment for this project was included in the "Preliminary Proposal for Bruce Generating Station B" which was distributed in February 1974. The environmental section of the preliminary proposal describes and assesses the existing environment and the environmental influences which would occur due to the construction and operation of an additional nuclear generating station, consisting of four 800 MW units, at the BNPD site. This proposed station (Bruce G.S. B) is essentially a duplicate of the station presently under construction (Bruce G.S. A). The proposed station will be designed, constructed and operated using proven technology and with the most up-to-date features to minimize the environmental impact. The final proposal will include the formal request, the environmental assessment, the public participation report and a complete report on the responses from interested ministries.

The BNPD site also accommodates the Douglas Point Generating Station and Bruce Heavy Water Plant A and Bruce Generating Station A which is now under construction. A separate proposal is being made for additional Heavy Water Plants B, C and D on the site.

1.2 SUMMARY

The electrical power demand on Ontario Hydro's East System continues to grow at 7% per year. It is expected that generation already committed will meet this increase until the end of 1978 with adequate reliability. A long range program to meet the Province's electrical power needs was tabled in the Ontario Legislature in June 1973. The program included fossil-fired stations at Wesleyville and in the Thunder Bay area, nuclear stations at Pickering, Bruce and Bowmanville and an extension of the Bruce Heavy Water Plant.

This proposal covers the new generation required for 1981. It is proposed that this generation be provided by an additional 3200 MW nuclear station at BNPD, comprising four 800 MW units, similar to the station presently under construction at the site. In order to meet the proposed first unit in-service date of 1981, construction would start in the spring of 1975. One unit would come into service in 1981, one in 1982 and two in 1983. The station is forecast to cost \$1,881,000,000 (1983 dollars).

Copies of the preliminary proposal were submitted to the Minister of Energy in February 1974 and to the following interested ministries:

Ministry of the Environment

Ministry of Natural Resources

Ministry of Agriculture and Food

Ministry of Housing

Ministry of Health

Ministry of Labour

Ministry of Transportation and
Communications

Ministry of Industry and Tourism

Ministry of Treasury Economics and
Intergovernmental Affairs

and also the Provincial Secretary for
Resources Development.

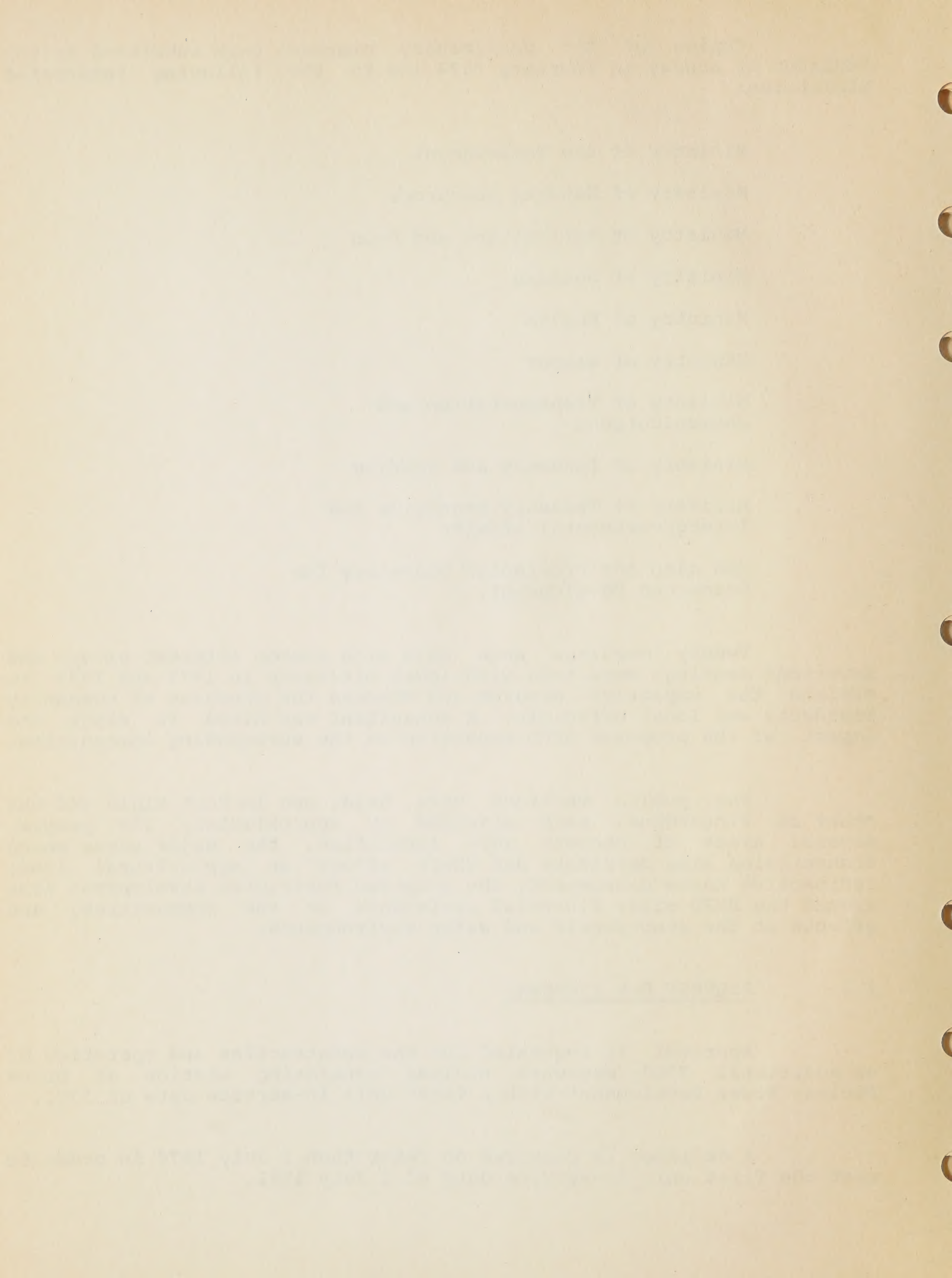
Twenty meetings were held with common interest groups and seventeen meetings were held with local officials in 1973 and 1974 to explain the expansion program and discuss the concerns of community residents and local officials. A consultant was hired to study the impact of the proposed BNPD expansion on the surrounding communities.

Two public meetings were held, one in Port Elgin and the other in Kincardine, each attended by approximately 250 people. Several areas of concern were identified, the major areas being transmission line corridors and their effect on agricultural land; radioactive waste management; the proposed restricted development zone around the BNPD site; financial assistance to the communities; and effects on the atmospheric and water environments.

1.3 REQUEST FOR APPROVAL

Approval is requested for the construction and operation of an additional 3200 megawatt nuclear generating station at Bruce Nuclear Power Development with a first unit in-service date of 1981.

A decision is required no later than 1 July 1974 in order to meet the first unit in-service date of 1 July 1981.



The main pressure for developing additional generation arises from the growth in electrical load. A secondary factor is the degree of reliability with which the power is to be supplied, and the amount of reserve generation needed to meet the reliability target. This in turn is dependent upon the capability of the operators and apparatus to accommodate a spectrum of contingencies without causing any loss of electrical service to Ontario Hydro's customers.

1.4.1 Forecast of Load Growth

Generally speaking, Ontario Hydro electrical load has grown in a climate of plenty. There has been space for the growing population plus immigration from abroad and other provinces. The economy has grown to support the population and to raise the standard of living. Supplies to Ontario Hydro of capital funds and raw materials have been adequate; and the environmental constraints which have always existed to some degree have not prevented Ontario Hydro from fully supplying all load growth.

In that climate, Ontario Hydro's power and energy loads have grown substantially. Although there have been wide year-to-year variations in growth, the long-term pattern has been exponential and roughly equivalent to a constant value of 7% per annum on both the East and West Systems. This has led to a doubling in load approximately every 10 years. Of the 7% per annum growth, roughly 2% was due to population growth and 5% due to increased per capita consumption.

In projecting future growth over the long term, major uncertainties exist. It seems probable that population growth will eventually decline, and that the growth in electrical load will also eventually decline. However, in the short-term period up to 1982, it is estimated that the average growth will continue at 7% per annum in the East System.

The load forecast for the East System indicates a load of 21,026 MW in 1980, 22,497 MW in 1981 and 24,072 MW in 1982.

1.4.2 Reliability of Electrical Supply

1.4.2.1 Components of Reliability

The overall electrical supply system can be conveniently separated into three functions: generation, bulk transmission, and distribution.

The reliability of the system is determined by two factors:

- (i) The availability of its components, i.e., whether a sufficient number of components is available to supply the load, as compared to being out of service due to breakdown, scheduled maintenance, etc. and,
- (ii) The security of its components, i.e., whether the components that are available have the ability to withstand sudden shocks due to breakdown or malfunction of equipment, natural phenomena (such as lightning), operating error, etc.

The major factors in overall reliability are the availability of the generation, and the security of the bulk transmission.

1.4.2.2 Factors Affecting Reliability

Some factors affecting the reliability of the components of bulk electrical supply are:

(a) Generating units and bulk transmission systems are not 100% dependable and breakdowns will occur. The extent of these breakdowns on generating units is affected by the sizes of the individual units, their type (fossil-fuelled or nuclear thermal, hydraulic, etc.), their design, the quality of their components, and the pattern to which they are operated.

(b) Equipment cannot run continuously. To reduce the number and effect of breakdowns, equipment must be taken out of service to enable preventative maintenance to be done.

(c) Equipment is subject to failure or reduction in output when subjected to adverse weather conditions such as extreme heat, cold, wind, ice, high or low river flows to hydraulic plants, etc.

(d) Strikes of staff.

(e) Failure of supplies of critical operating materials, eg., coal, oil, gas, heavy water, nuclear fuel, etc.

(f) Failure to bring new generation and transmission facilities into service on schedule.

(g) Failure of Hydro-Quebec, Manitoba Hydro or other utilities to deliver firm power as contracted.

(h) Unanticipated changes in governmental policies, regulations, or guidelines, which may reduce Ontario Hydro's freedom to use its facilities as designed, or which may require plant to be kept out of service in order that it can be rebuilt or improved.

(i) Errors in operating and maintaining equipment.

(j) Unavailability of staff and facilities within Ontario Hydro and among manufacturers for effecting maintenance and repairs.

The reliability of the Ontario Hydro East System is also affected by the extent to which it can obtain assistance from neighbouring systems. Difficulties in obtaining approvals for new generation and transmission are being experienced by the systems in the United States. It seems likely that in the period 1977-1982, they will be short of reserve capacity and transmission, and their assistance should not be relied upon as a means for reducing Ontario Hydro generation. Joint studies of reserve savings have been made by Ontario Hydro and Hydro-Quebec; but their conclusion was that they were not practicable in the period up to 1980.

1.4.2.3 Future Reliability of Electrical Supply

It is assumed that the current high level of reliability must be maintained in the future, for it is critical to most industrial, commercial, and rural customers, and highly desired by residential customers.

To maintain this level of reliability in the period 1977-1982, the reserve generating capacity as a percent of the load should be about 27% of the East System.

1.4.3 Additional Generation Required

Generation committed under the present program is expected to meet the forecast loads in the East System until the end of 1978 with adequate reliability; but in 1979 and 1980, it provides the following relationship between capacity and load:

	<u>1979</u>	<u>1980</u>
1. Capacity under the committed program	23700 MW	23700 MW
2. Forecast load	<u>19556 MW</u>	<u>21026 MW</u>
3. Reserve capacity (1-2)	4144 MW	2674 MW
4. Reserve capacity as a percent	21%	13%

The reserve capacity is inadequate in 1979 and 1980. Under the proposal to bring two 538 MW units into service at Wesleyville in each of the years 1979 and 1980, the following relationship would apply:

	<u>1979</u>	<u>1980</u>
1. Capacity proposed	24776 MW	25852 MW
2. Forecast load	<u>19556 MW</u>	<u>21026 MW</u>
3. Reserve capacity (1-2)	5220 MW	4826 MW
4. Reserve capacity as a percent of load	27%	23%

Thus, the Wesleyville proposal meets the reserve requirement in 1979, but it does not meet the requirement in 1980. Further new capacity will be required to be brought into service in 1980 at another site.

Under the proposal to bring one 514 MW unit into service at Pickering in 1980, followed by two units in 1981 and one unit in 1982 the following relationship would apply:

	<u>1980</u>	<u>1981</u>	<u>1982</u>
1. Capacity proposed	26366 MW	27394 MW	27908 MW
2. Forecast load	<u>21026 MW</u>	<u>22497 MW</u>	<u>24072 MW</u>
3. Reserve capacity (1-2)	5340 MW	4897 MW	3836 MW
4. Reserve capacity as a percent of load	25.5%	22%	16%

Thus the Pickering proposal meets the approximate reserve requirement in 1980 but it does not meet the requirement in 1981 and 1982. Further new capacity will be required to be brought into service in 1981 and 1982 at another site.

Under the proposal to bring one 745 MW unit into service at Bruce in 1981, followed by one unit in 1982 and two units in 1983 the following relationship would apply:

	<u>1981</u>	<u>1982</u>
1. Capacity proposed	28,139 MW	29,398 MW
2. Forecast load	22,497 MW	24,072 MW
3. Reserve capacity (1-2)	5,642 MW	5,326 MW
4. Reserve capacity as a percent of load	25%	22%

Thus the proposal for Bruce Generating Station B meets the approximate reserve requirement in 1981 but it does not meet the requirement in 1982. Further new capacity will be required to be brought into service in 1982 at a new site.

1.5 THE CONSIDERATION OF ALTERNATIVES

In determining a course of action for any system as complex as electrical supply, a large number of alternatives must be evaluated. Some of the more important of these are discussed below.

1.5.1 The Alternative of Not Providing Generation

Short of a major catastrophe or an economic depression, the load forecast for the period up to 1981 could probably only be reduced by the voluntary action of customers or by government control. There is a high probability that the load will occur, and therefore, failure to bring the proposed plant into service in 1981 would substantially reduce the system reserve. This would cause a marked decrease in the reliability of supply. Therefore, it is recommended that the proposed generation be committed for first in-service in 1981.

1.5.2 Alternative Sources of Additional Generation 1977-1982

(a) Purchases

Further purchases of firm power from Quebec, Manitoba and Saskatchewan are under recurring review. At present for the period 1977-1982, purchases from Quebec seem unlikely. Purchases from Manitoba and Saskatchewan are not practicable at present for the East System but are being examined for the West System.

(b) Hydraulic Capacity

The remaining undeveloped hydraulic capacity in Ontario is either small in terms of its energy-producing content, or it is located at large distances from existing load centres. The few sites which may be economic for development in the period 1977-1982 will not substantially affect the need for new fossil-fuelled and nuclear capacity on either the East or West Systems.

(c) Pumped Storage

Some potential pumped storage projects are available but these will not be economic until a large additional amount of nuclear capacity is developed.

(d) Combustion Turbines

These units are relatively new on the market and have suffered from poor operating availability, but there are indications that their reliability is improving. They require premium fuels and are not economic for generating large blocks of energy. In the period 1977-1982, some units may be usefully installed on the West System; but they do not appear desirable for installation on the East System except as a stop-gap.

(e) Conventional Fossil Generation

Since 1960, fossil-fired plant has been the primary means of meeting load growth in the absence of further large water power developments. Reliability has been a continuing problem, but constant effort and development have brought it to an acceptable level. However, there are great uncertainties surrounding the future supply and cost of acceptable fossil fuel, and also many difficulties impeding the development of practical commercial methods for treating either the fuel or flue gas to reduce noxious emissions to the atmosphere. These problems enhance the relative position of nuclear generation and make it the favoured alternative for the future. Because of its lower capital cost and higher operating cost, fossil generation is more economic than nuclear at low capacity factors, but less economic than nuclear at moderate and high capacity factors.

(f) Nuclear Generation

Because of lower fuelling costs, CANDU nuclear generation is more economic than fossil at moderate and high capacity factors, even though its capital cost is higher. Nuclear generation appears more acceptable from an environmental point of view. The price and security of supply of nuclear fuel is considerably more stable than that of fossil fuel.

The reliable production of heavy water needed by the CANDU reactor is vital for predicting the in-service dates of nuclear units. At present, there is a considerable effort to bring operating heavy water plants up to full production and approvals are being sought for additional heavy water plants. It is believed that heavy water will be available in the quantities required for the nuclear generating units covered in this proposal.

In considering the problems associated with both types of generation, those of nuclear generation appear to be considerably less difficult to solve. Accordingly, it is expected that nuclear generation will comprise the major share of Ontario Hydro's future electrical generation.

Proposal

In view of our confidence in adequate heavy water supply and the economic advantage for this high capacity factor station, together with our belief that nuclear generation appears more acceptable with regard to environmental considerations, nuclear generation is proposed to meet the 1981 forecast needs.

1.5.3 Alternatives for Station Location

The generating station must be located on a site already owned by Ontario Hydro and should be situated close to the load it will serve in Southern Ontario.

Ontario Hydro owns five sites in this area:

Pickering site, east of Toronto;
Lennox site, west of Kingston;
Wesleyville site, west of Port Hope;
Bowmanville site, west of Bowmanville;
Bruce site, on Lake Huron between Kincardine
and Port Elgin.

Each site is capable of accommodating two generating stations. A 2152 MW oil-fired station is currently under construction at the Lennox site and the first unit is scheduled for commercial service in June 1975. A 2152 MW oil-fired station is currently proposed for the Wesleyville site and the first unit is scheduled for commercial service in April 1979. A 2160 MW nuclear station addition is currently proposed for Pickering and the first unit is scheduled for commercial service in 1980.

Continuing environmental studies have been carried out on each of these sites, to establish their capability to accept specific types and sizes of generating stations.

In the case of the Bowmanville site, a period of one year or more is required for site grading prior to any construction activity. This extends the schedule and will not permit the commitment of this generating station for 1981 in-service.

The Bruce Nuclear Power Development site was acquired for a multi-unit installation and the engineering and construction experience on the first four units enables us to predict the schedule with a high degree of confidence and place reliance on having the first unit in service in July 1981. We can use existing field expertise and construction facilities and existing design expertise and manpower requirements will be reduced.

The environmental assessment for Bruce Generating Station B indicates that the station can be located on this site without significant harm to the environment.

Proposal

It is proposed that the station be sited at Bruce Nuclear Power Development.

1.6 PROJECT CAPITAL COSTS

An estimate of station capital cost is given in both 1974 and 1983 dollars. 1983 is the first year that the entire station is scheduled for service. The 1974 figures are for a hypothetical station that is built and operated in 1974 costs, and are provided for reference to current costs.

	<u>1974</u> <u>Dollars</u>	<u>1983</u> <u>Dollars</u>
Station capital cost	1,254,000,000	1,881,000,000
Total installed kilowatts	2,980,000	2,980,000
Dollars per installed kilowatt	421	631

2.0 ERRATA FOR "PRELIMINARY PROPOSAL FOR BRUCE
GENERATING STATION B"

- (1) Page 2-5, 1st paragraph - Revise 2nd sentence to read:

"Plans provide for two 500 kV double-circuit lines leaving the BNPD site."

- (2) Page 4-1, 6th paragraph - Revise "present 800 Mg/year to 3200 Mg/year" to read: "present 100 kg/hour to 400 kg/hour".

- (3) Figure 2, following page 4-2 - This figure (attached) was missing from the preliminary document.

- (4) Page 6-9, Table 6.3 - Last column, " ≤ 25 " should be changed to " ≥ 25 ".

- (5) Figure 20, following page 6-54 - The land use indicated in Kincardine Township is existing land use as opposed to planned land use.

- (6) Page 7-7, last paragraph - Revise 1st sentence to read:

"Plans for the proposed construction of Bruce G.S. B provide for stringing a second circuit on each of the two double-circuit tower lines which will initially accommodate the circuits from Bruce G.S. A."

- (7) Page 8-3, Table 8.1 - Last column, all ">" signs should be "<". Last footnote should read "no off-gas management system installed".

- (8) Page 8-8, Equation 2 - Revise "=" sign to " \geq ".

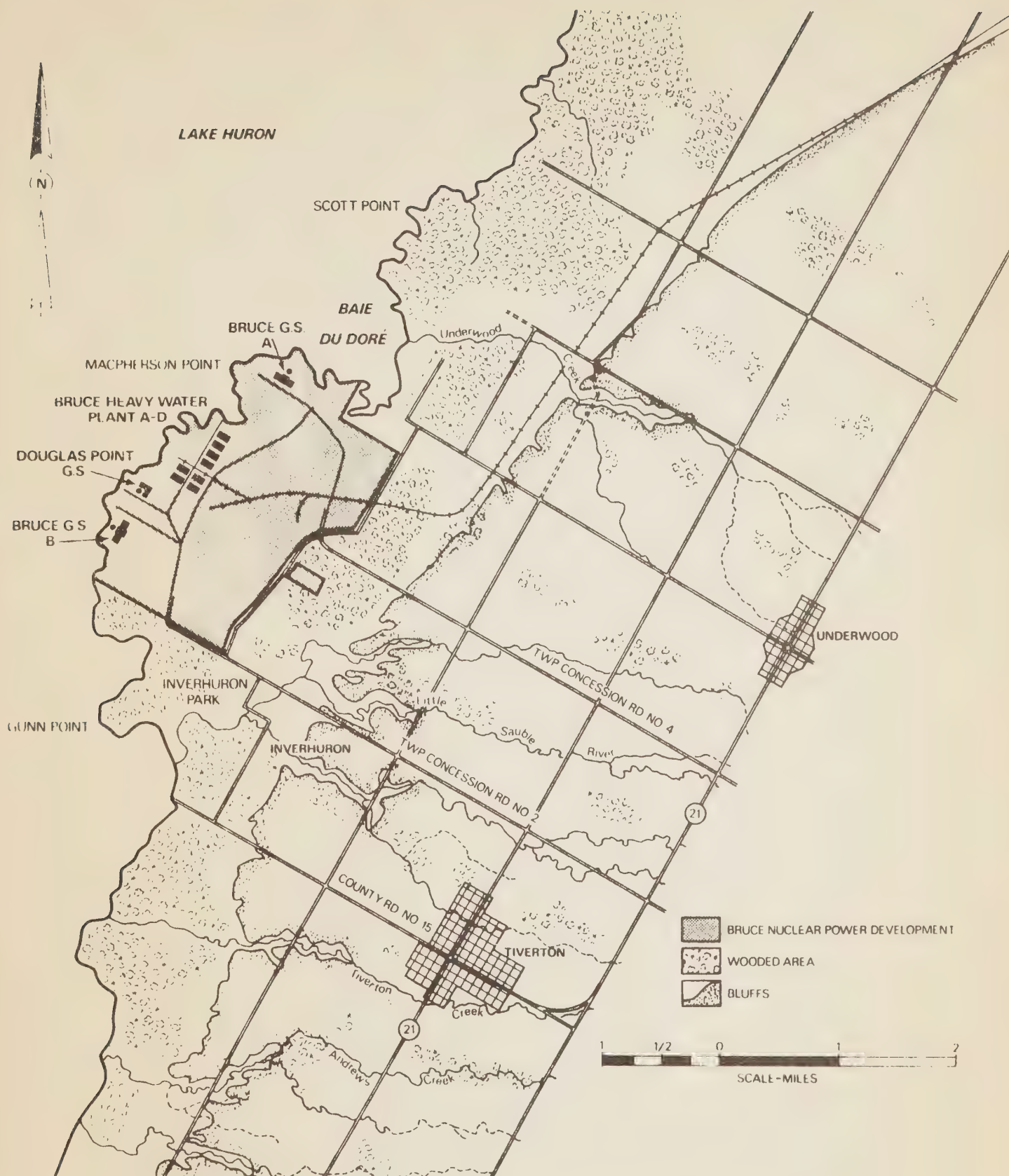


FIGURE 2 SITE AREA

DRAFT FINAL PROPOSAL

FOR

BRUCE HEAVY WATER PLANTS B, C & D

CONTENTS

- 1.0 PROPOSAL FOR BRUCE HEAVY WATER PLANTS B, C AND D
 - 1.1 Introduction
 - 1.2 Summary
 - 1.3 Request for Approval
 - 1.4 The Need for Heavy Water
 - 1.4.1 Ontario Hydro's Heavy Water Requirement
 - 1.4.2 Additional Heavy Water Production Required
 - 1.5 Suitability of BNPD as a Site and Consideration of Alternatives
 - 1.6 Project Capital Cost
- 2.0 ERRATA SHEETS FOR THE "PRELIMINARY PROPOSAL FOR BRUCE HEAVY WATER PLANTS B, C AND D" PUBLISHED IN FEBRUARY 1974

1.0 PROPOSAL FOR BRUCE HEAVY WATER PLANTS B, C AND D

1.1 INTRODUCTION

This document contains the request by Ontario Hydro for approval by the Provincial Government of its plan to construct and operate Bruce Heavy Water Plants B, C and D at the Bruce Nuclear Power Development (BNPD). This draft final proposal also contains a summary of the public participation program and the responses received from the interested ministries at this time.

The environmental assessment for this project was included in the "Preliminary Proposal for Heavy Water Plants B, C and D" which was distributed in February 1974. The environmental section of the preliminary proposal describes and assesses the existing environment and the environmental influences which would occur due to the construction and operation of three additional Heavy Water Plants, (Bruce HWP B, C and D), each consisting of two enriching units and one finishing unit, on the Bruce Nuclear Power Development (BNPD) site. The proposed plants and associated facilities are essentially similar to the existing heavy water plant (Bruce HWP A). The proposed extension will be designed, constructed and operated using the most up-to-date technology and safety features to minimize adverse environmental influences.

The BNPD site at present accommodates a nuclear generating station, Bruce G.S. A, consisting of four units designated Units 1 to 4. The site also accommodates the Douglas Point Generating Station and Bruce Heavy Water Plant A. A separate proposal is being made for an additional nuclear generating station, Bruce G.S. B, with Units 5 to 8 on the BNPD site.

1.2 SUMMARY

Future electrical generating capacity for Ontario Hydro will rely heavily on nuclear-electric generation of the CANDU type. To meet the forecast nuclear-electric generation additions, there is a growing demand for heavy water. This document proposes that additional heavy water plants "B", "C" and "D" with a nominal production capacity of 300 kg/hr be constructed at Bruce. Proposed additional heavy water plant facilities at the Bruce site were included in the long-range energy program tabled in the Ontario Legislature in June 1973.

Approval of this proposal is essential to supply the heavy water required for the future nuclear generation programs into the 1980's. In order to meet the proposed B unit in-service date of 1978, approval of the project is required immediately.

Copies of the preliminary proposal were submitted to the Minister of Energy in February 1974 and to the following interested ministries:

Ministry of the Environment

Ministry of Natural Resources

Ministry of Agriculture and Food

Ministry of Health

Ministry of Labour

Ministry of Transportation and
Communications

Ministry of Housing

Ministry of Treasury Economics and
Intergovernmental Affairs

Ministry of Industry and Tourism

and also the Provincial Secretary for
Resources Development.

Twenty meetings were held with common interest groups and seventeen meetings were held with local officials in 1973 and 1974 to explain the expansion program and discuss the concerns of community residents and local officials. A consultant was hired to study the impact of the proposed BNPD expansion on the surrounding communities.

Two public meetings were held, one in Port Elgin and the other in Kincardine, each attended by approximately 250 people. Several areas of concern were identified, the major areas being transmission line corridors and their effect on agricultural land; radioactive waste management; the proposed restricted development zone around the BNPD site; financial assistance to the communities; and effects on the atmospheric and water environments. A report on the public participation program which includes both the heavy water plant expansion and the Bruce Generating Station B is included.

1.3 REQUEST FOR APPROVAL

Approval is requested for the construction and operation of Heavy Water Plants B, C, and D at Bruce Nuclear Power Development with a first unit in-service date of 1978.

A decision to proceed is required immediately to meet the first unit in-service date of 1978.

1.4 THE NEED FOR HEAVY WATER

1.4.1 Ontario Hydro's Heavy Water Requirements

The pressure for developing additional heavy water production capacity arises from the growth in nuclear-electric generation of the CANDU type.

Ontario Hydro's proposed generation program includes three nuclear-electric generating stations each with four units scheduled to come into service between 1980 and 1984. In projecting future growth over the long term, major uncertainties exist. It is believed, however, that nuclear-electric generation will represent at least two-thirds of the growth in capacity between 1984 and 1994.

1.4.2 Additional Heavy Water Production Required

To meet Ontario Hydro's nuclear-electric generating program, a nominal production capacity of 400 kilograms (881.4 lbs) per hour 1978 onwards is the least that can be considered. The present capacity of Bruce HWP A on the BNPD site is 100 kilograms (220.5 lbs) per hour.

The production from the Port Hawksbury Heavy Water Plant owned by Canadian General Electric Company Limited, the Glace Bay Heavy Water Plant owned by the Province of Nova Scotia and Atomic Energy of Canada Limited and any further plants committed by the Federal Government will be required for Federal and other Provinces' needs. None is assured of being available to Ontario Hydro.

Table 1.1 summarizes the forecast heavy water demand for Ontario Hydro up to 1990.

The reliability of heavy water supply is vital.

Unreliability of heavy water supply arises from late commitment, late in-service, process problems, hardware problems, steam supply problems, electricity supply problems and labour problems. A buffer of 18 months is considered desirable to ensure the heavy water demand is met on schedule.

Accordingly, the "Required Supply" is the basic "Demand" brought forward by the 18 month "Buffer".

If the nuclear-electric generation program proceeds and a shortage of heavy water develops, there are two major implications:

- (i) Increased cost to customers through emergency installations, emergency purchase, and burning fossil fuels, assuming such capacity and fuels are available.
- (ii) A shortage of electricity to homes, commerce and industry in Ontario, assuming alternative fossil fuelled capacity is not available.

TABLE 1.1

ONTARIO HYDRO HEAVY WATER DEMAND

Year Col. 1	Inventory Demand (Mg)		Makeup Demand (Mg)		Total Demand (Mg)	Required Supply (Mg)
	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7
	Annual	Cumulative	Annual	Cumulative	Cumulative	Cumulative
1970	500	500	0	0	500	1,500
1971	500	1,000	5	5	1,005	2,050
1972	500	1,500	5	10	1,510	2,100
1973	500	2,000	40	50	2,050	2,800
1974	500	2,000	40	90	2,090	3,500
1975	700	2,700	30	120	2,820	4,250
1976	700	3,400	20	140	3,540	5,420
1977	700	4,100	50	190	4,290	6,200
1978	1,200	5,300	80	270	5,570	7,840
1979	1,500	6,800	90	360	7,160	10,190
1980	2,150	8,950	90	450	9,400	12,400
1981	1,800	10,750	80	530	11,280	13,430
1982	1,100	11,850	120	650	12,500	15,900
1983	2,250	14,100	160	810	14,910	18,350
1984	1,500	15,600	200	1,010	16,610	20,600
1985	2,250	17,850	200	1,210	19,060	21,800
1986	1,500	19,350	210	1,420	20,770	24,300
1987	2,250	21,600	260	1,680	23,280	27,300
1988	1,500	23,100	310	1,990	25,090	30,600
1989	2,700	25,800	260	2,250	28,050	33,400
1990	2,400	28,200	250	2,500	30,700	36,000

1.5 SUITABILITY OF BNPD AS A SITE AND CONSIDERATION OF ALTERNATIVES

In considering possible locations for additional heavy water plant capacity in Ontario, the factors discussed below are considered most essential.

Good Water Supply

Lake Huron has excellent feed water which contains heavy water in the concentration of 148 ppm. It has excellent chemical properties also as demonstrated from experience with the existing heavy water plant at BNPD.

Reliable Steam

BNPD offers excellent reliability of steam supply.

Reliable Electrical Supply

BNPD will have high reliability because of the large number of planned on-site units as well as the interconnections with the bulk power system.

Acceptable Safety

BNPD is excellent from a safety point of view. The population density around the site is low, and now that agreement has been reached with the Ministry of Natural Resources concerning Inverhuron Park the population density close to the site can be controlled.

Public Acceptance

The Bruce Heavy Water Plant Enriching Units E1 and E2 have not been perfect as regards odours and some justified complaints have been received. However, Ontario Hydro is confident that an excellent standard can be achieved in maintaining a low frequency of undesirable odour occurrences in the nearby community.

Economics

The BNPD site provides the following economic advantages:

1. Low cost steam from the Bruce Generating Stations.

2. Operation and maintenance costs will be relatively low because of established workshops, transportation facilities for personnel, site services, public relations, excellent labour diversity, technical staff and the like.
3. Construction costs will be favourable since construction facilities will already exist.
4. Labour stability will be equal to or better than most other locations in Canada.
5. Water facilities are ample and close.
6. General economy will be achieved through volume purchases.

Schedule

The site promises a shorter real time to build a good performance plant than any new site in Ontario. This takes into account a reasonable allowance for local community acceptance and regulatory approval.

Other Sites

There are other sites in Ontario that could possibly be developed for heavy water production. These are few in number and Ontario Hydro does not own any of them at present. To evaluate, acquire, develop and obtain regulatory approval for any one of these sites in the available time is not possible.

Proposal

In summary the additional Bruce Heavy Water Plants B, C and D are proposed on the BNPD site for the following reasons:

1. Excellent, proven, adequate water supply.
2. Excellent, highly reliable, low cost steam supply.
3. High reliability electricity supplies.
4. Excellent site from the public safety viewpoint.
5. Good Unit Mass Cost economy.

6. Only site in Ontario which can be developed in time for meeting heavy water demands.

1.6 PROJECT CAPITAL COST

The estimated capital cost of the proposed Plants B, C and D is \$1,071,000,000 in 1979 dollars.

2.0 ERRATA FOR "PRELIMINARY PROPOSAL FOR BRUCE HEAVY
WATER PLANTS B, C AND D"

- (1) Page 4-2, 1st paragraph - change "800 Megagrams per year" to "100 kilograms (220.5 lbs.) per hour".

Change "3200 Megagrams per year" to "400 kilograms (881.8 lbs.) per hour".

- (2) Page 4-2, 4th paragraph should read:

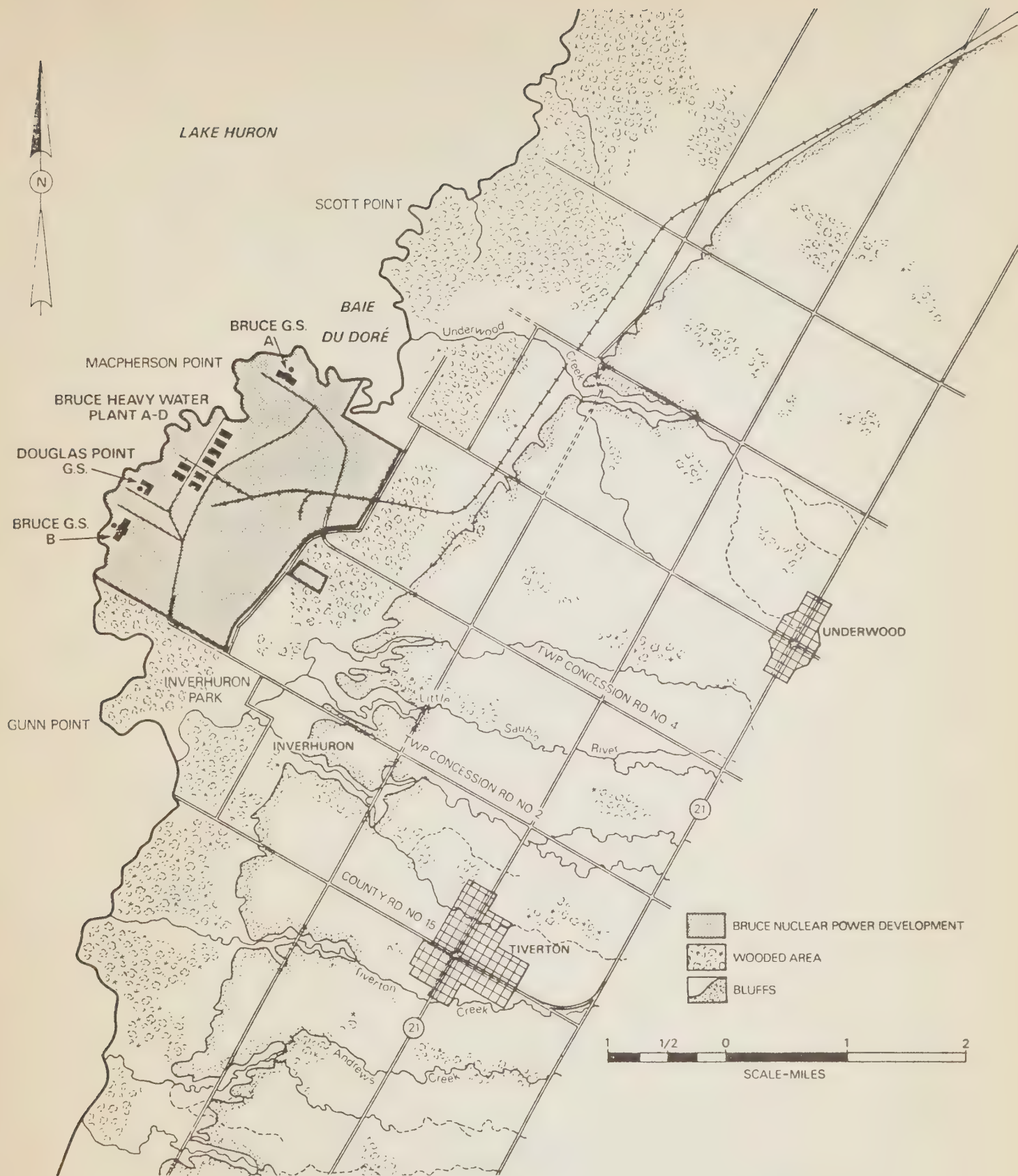
"The current schedule is directed towards completing Bruce HWP B for service in January, 1978 and the remaining two plants, C and D, at successive 9 and 8 month intervals respectively as shown below:

<u>Plant</u>	<u>Scheduled In-Service Date</u>
B	January, 1978
C	October, 1978
D	June, 1979

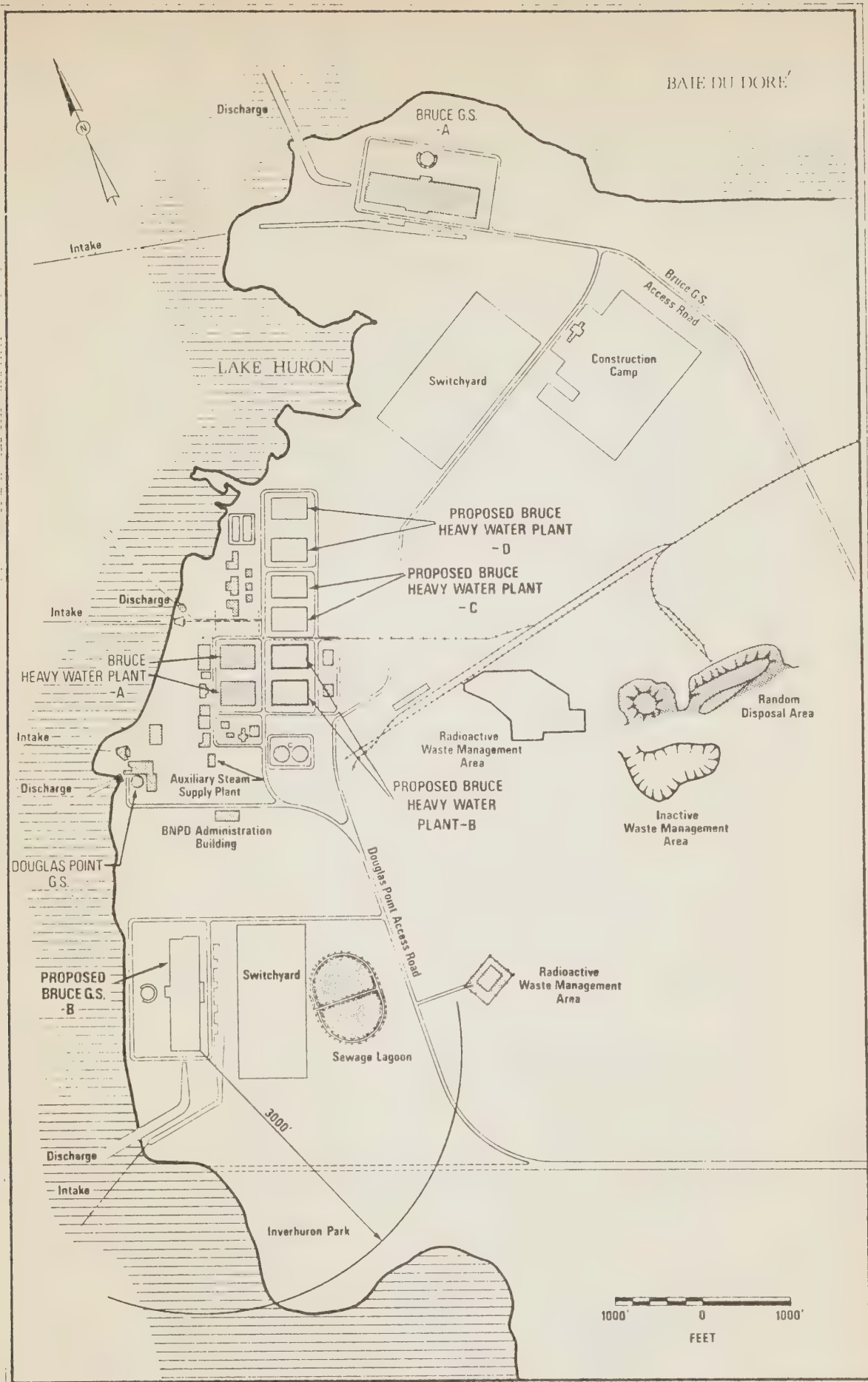
- (3) Page 4-3, Table 4.1: in-service dates for Bruce HWP C and D are October, 1978 and June 1979 respectively.
- (4) Figure 4 shows the proposed Bruce G.S. B location incorrectly. A new Figure 4 is included.
- (5) Page 4-6, 1st paragraph change "2400 Megagrams per year" to "300 kilograms (661.4 lbs.) per hour".
- Change "3200 Megagrams per year" to "400 kilograms (881.8 lbs.) per hour".
- (6) Figure 11 shows the proposed Bruce G.S. B location incorrectly. A new Figure 11 is included.
- (7) Page 6-17, Table 6.6 change " ≤ 25 " to " ≥ 25 ".
- (8) Figures 19 and 20 show the proposed Bruce G.S. B location incorrectly. New Figures 19 and 20 are included.
- (9) Figure 23 - The land use indicated for Kincardine Township is existing land use as opposed to planned land use.

(10) Page 8-18, equation 2, symbol " \leq " should be " \geq ".

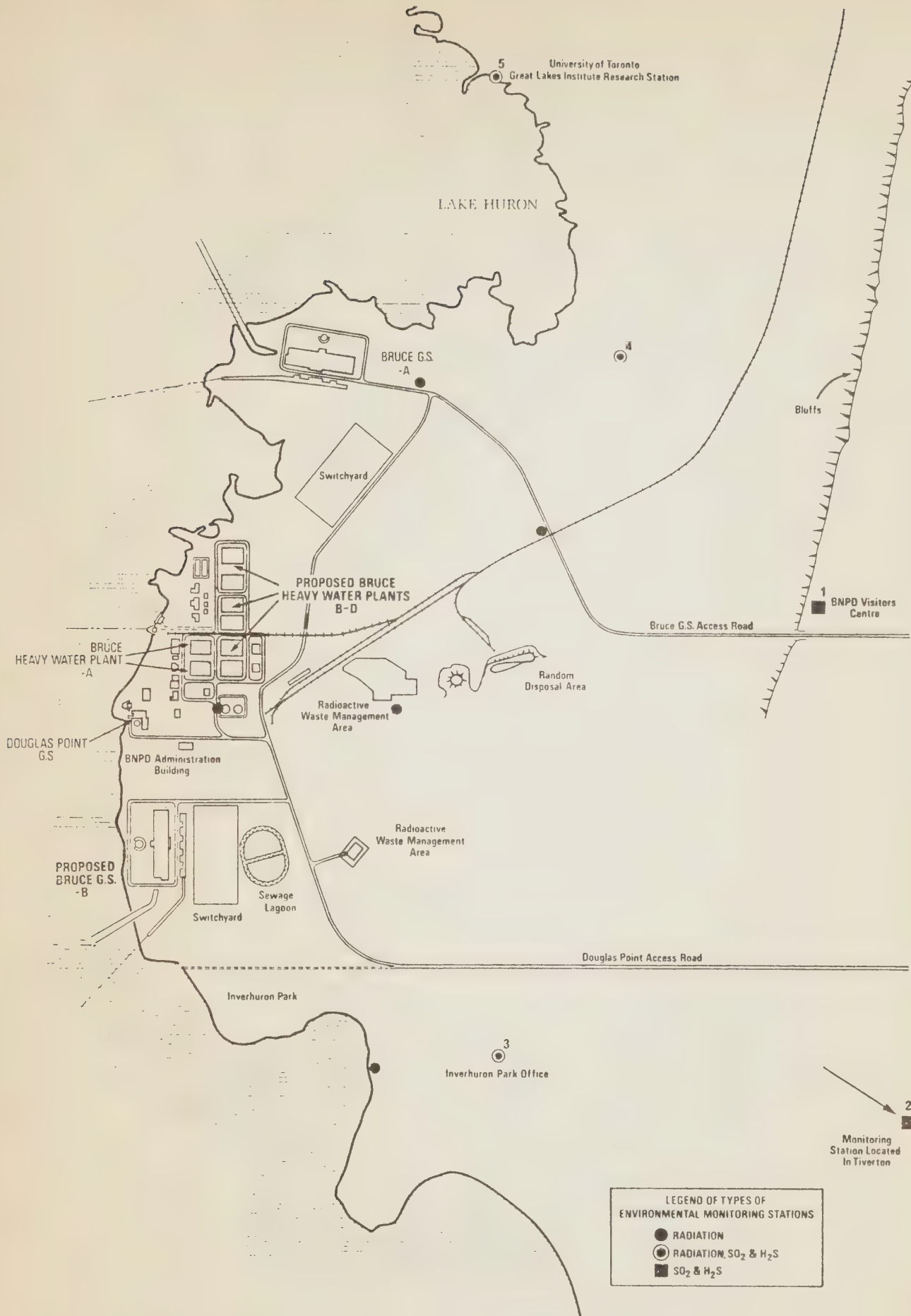
(11) Figure 32 - reference to Table 8.8 should be Table 8.7.



SITE LOCATION



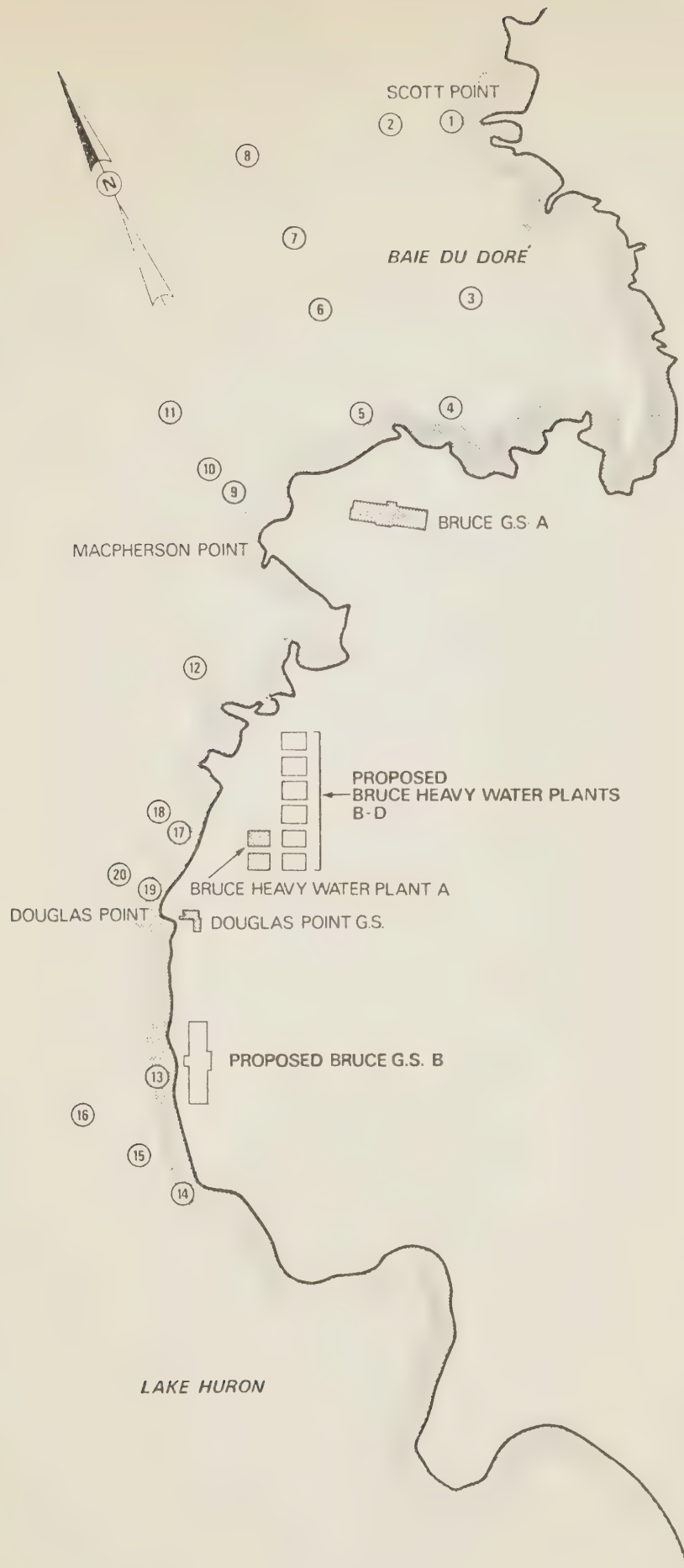
SITE LAYOUT - BNPD



AIR QUALITY MONITORING SITES



AQUATIC BIOLOGY STUDY SITES, 1972



AQUATIC BIOLOGY STUDY SITES, 1973

REPORT ON
PUBLIC PARTICIPATION PROGRAM

CONTENTS

1.0	SUMMARY OF PROGRAM
2.0	CONCLUSIONS
3.0	CALENDAR OF EVENTS
4.0	PRELIMINARY PROPOSALS
5.0	MEETINGS WITH LOCAL OFFICIALS
6.0	MEETINGS WITH COMMON-INTEREST GROUPS
7.0	PUBLIC MEETINGS
8.0	LETTERS FROM THE PUBLIC
9.0	BRIEFS
10.0	NEWSPAPER ARTICLES
11.0	LETTERS FROM ONTARIO MINISTRIES

An extensive public participation program has been on-going in the surrounding communities following the announcement, in June 1973 by the Ontario Government, of the system expansion program. This program included additional facilities at the Bruce Nuclear Power Development site.

The Bruce site nuclear expansion program proposed is described by the two documents, "Preliminary Proposal for Bruce Generating Station B" and "Preliminary Proposal for Heavy Water Plants B, C, and D". The nuclear power station is proposed to meet the load growth expected in the 1980's and the heavy water plants are planned to support the overall nuclear power expansion program in Ontario.

The public participation program included seventeen meetings with local officials, twenty meetings with common interest groups and a large public meeting in each of the towns of Port Elgin and Kincardine. Additional activities included educational programs in schools, mailings of pamphlets and brochures on the expansion program, tours of existing facilities on the site, press releases, radio and television interviews explaining the expansion program. Each preliminary proposal, including the environmental assessment, was distributed to government ministries and concerned groups as well as to interested individuals directly and through public offices and libraries. A combined synopsis of both proposals was also made available in public offices and libraries in the area and freely given to any member of the public. Mailing lists for pamphlets and public meetings included non-resident cottage owners as well as residents so it is believed that all parties in the area were aware of the proposal and had opportunity to make their views known. Further information on the public participation is detailed in the following sections.

Many questions were received regarding the expansion of the Bruce Nuclear Power Development. These related to both local and neighboring community impact and expansion of the nuclear power program.

Ontario Hydro maintains close contact with local officials on problem areas and has responded to the many questions submitted verbally at meetings and also by letter.

With regard to the concern for rezoning the area around the development, Ontario Hydro has explained that a low density population zone was considered desirable for safety reasons associated with the heavy water plant. In general, existing land use may continue.

Interim financial assistance is being provided to each of the towns of Port Elgin and Kincardine to assist in the planning, building and financing of additional amenities. In addition, Ontario Hydro has hired a consultant to assist in assessing the community impact of the proposed expansion. The consultant is meeting with local officials to determine the nature and magnitude of the social and economic effects of the Bruce Nuclear Power Development.

Some people were concerned about increased odours with additional heavy water plants. Ontario Hydro has explained that improved plant design and operating procedures will further reduce the incidence of odours.

Concerning the air environment, Ontario Hydro has explained that all plants will be built and operated according to regulatory requirements.

With regard to concern about the thermal effluent Ontario Hydro has experience from other generating plants and no deleterious effects are expected along the shoreline of the Bruce site.

Several people expressed concern about the radioactive waste storage areas and the long-term spent fuel storage schemes. Ontario Hydro has explained that the technology and expertise exists today to look after these areas and that the effort required to manage these areas decreases with time. In the case of the spent fuel storage, it has been explained that Ontario Hydro's policy is to store this spent fuel so it can be retrieved if recycling becomes economical.

In response to a question about the safety of the nuclear power plant from sabotage, Ontario Hydro has explained that it would be very difficult for a group to cause an accident that would involve the public. There are many safety systems inherent in the plant design which protect against large releases of radioactive materials to the environment for whatever initial reason.

Several owners of property adjacent to the site have complained about the undesirable aspects of construction activities related to the existing and expansion plans and are concerned about a decrease in their property values. Ontario Hydro has explained that it does not believe that any decrease in property values will be permanent and that there is no plan to gradually assimilate Inverhuron.

In answer to concerns about expansion of the nuclear power program at this time, Ontario Hydro has explained that this method of electrical generation is considered to have the least deleterious affects on the environment for the large quantities of electrical energy required to meet forecasted demands. The available alternatives of producing electrical energy by burning coal gas or oil are considered less desirable than producing electrical energy from nuclear power stations. In addition, the energy cost from nuclear power plants is considered less sensitive to inflation than the energy costs from any of the alternatives.

Questions were raised regarding the forecasting of load growth and the need to increase the supply of electrical energy. The method of forecasting and the computation of reserve were explained by Ontario Hydro.

Neighboring communities raised concern about the planned use of agricultural land for transmission line corridors and suggested that alternate routes be examined. There were complaints about the procedures employed to purchase the transmission-line corridor land and this item has been placed under review by Ontario Hydro.

Arising from discussions with the public and with local officials, concerns have been identified.

With the assistance of the report from the consultant engaged to study the community impact and with continued discussions with the public, local officials and Government Ministries, Ontario Hydro's is confident that acceptable solutions to most problems can be found.

The basic issues of land use priorities and electrical generation alternatives remain unresolved in the minds of certain citizen groups.

1973 Summer: Seventeen meetings with local officials listed in Section 5.0.

1973,1974 Winter: Twenty meetings with common interest groups listed in Section 6.0

1973, Fall: Press coverage of proposed expansion plans at Bruce Nuclear Power Development.

February 1974: Distribution of "Preliminary Proposal for Bruce Generation Station B" and the combined synopsis to those listed in Section 4.0.

February 1974: Distribution of "Preliminary Proposal for Bruce Heavy Water Plants B, C, & D" to those listed in Section 4.0.

March 4, 1974: Mailing of public meeting notices and information kits and press, radio and television announcements of the public meetings.

March 13, 1974: Port Elgin public meeting.

March 14, 1974: Kincardine public meeting.

Separate preliminary proposals for Bruce Generation Station B and for Heavy Water Plants B, C and D were prepared. Each preliminary proposal included a comprehensive environmental assessment.

Copies of the preliminary proposals were sent to the Ministry of Energy and to other interested ministries in late February 1974:

Ministry of the Environment

Ministry of Natural Resources

Ministry of Agriculture and Food

Ministry of Transportation and Communications

Ministry of Housing

Ministry of Industry and Tourism

Ministry of Treasury Economics and Inter-governmental Affairs

Ministry of Health

and also the Provincial Secretary for Resources Development

On February 25, 1974 the documents were made public.

A combined synopsis containing the formal proposals and summaries of the environmental assessments from both the preliminary proposals was printed for wider distribution.

Copies of the preliminary proposals and the synopsis were placed in the following locations:

- Kincardine Library, Port Elgin Library, Bruce County Library
- Municipal Offices of Kincardine, Tiverton, Port Elgin, Southampton, Kincardine Township, Bruce Township, Saugeen Township
- Bruce County Planning Office, Walkerton

- Ontario Hydro Area Office, Walkerton
- Bruce Nuclear Power Development Information Office

Copies of the preliminary proposals and the synopsis were also supplied to Pollution Probe, the Sierra Club, the Federation of Ontario Naturalists, The Saugeen Conservation Authority and the Ontario Federation of Hunters and Anglers.

Seventeen meetings were convened with local officials as listed below. The topics discussed at each meeting are also itemized. The status of the Bruce Nuclear Power Development facilities was reviewed and the proposed expansion was outlined. Copies of a document "Expansion of the Bruce Nuclear Power Development - A Preliminary Evaluation" were distributed. Copies of manpower forecasts were also made available.

Town of Port Elgin, July 9, 1973: represented by the Mayor, Mr. Rober E. Irvings, and Ms. Jeanette Steeves, Mr. Howard Collins, Mr. Bill Coutler.

Bruce Township, July 9, 1973: represented by the Reeve, Mr. John MacKenzie and Mr. Ken McLeod, Mr. Ewart Tennison, Mr. Jim Hutton, Mr. Sheldon Kidd, Mr. Lloyd Brown.

Town of Kincardine, July 10, 1973: represented by the Mayor Mr. John T. Askin, and Mr. Don Mason, Mr. Brian Grant, Mr. Charles Mann, Ms. Donna Wilson, Mr. Earl Wrightson.

Saugeen Township, July 11, 1973: represented by the Reeve, Mr. Alex Lamont, Mr. Clayton Doll, Mrs. M. Esplen, Mr. Clifford Short, Mr. Harry Thede.

Bruce County Board of Education, July 12, 1973: represented by the Director Mr. J.L. Bowers, and Mr. Keith Waldie, Mr. Charles Beamer, Mr. Neil McConnell, Mr. Teake Veenstra.

Town of Southampton, July 16, 1973: represented by the Mayor Mr. Don D. Mercer, and Mr. James G. McGee, Mr. S.J. Dunning, Mrs. Cora Blacklock, Mrs. E. Kennedy, Mr. Maurice O'Dwyer, Mr. John Green, Mr. Stan Hills, Mr. Robert Thompson, Mr. Elgin Shular.

Town of Tiverton, July 17, 1973: represented by the Reeve Mr. Eldred Reid, and Ms. Marsha Leggett, Mr. Whitey Crawford, Mr. Smith Lowry, Mr. Frank Mahaffy.

Town of Paisley, July 18, 1973: represented by the Reeve, Mr. Andy Cormak, Mr. Ron Abb, Mr. George Grant, Mr. Ralph Anderson, Mr. Lewis Coffman, Mr. Bob Cottrill.

Kincardine Township, July 19, 1973: represented by Reeve Alvin Thompson, Mr. Angus MacArthur, Mr. Cliff Hewitt, Mr. Bill Luinstra.

Town of Walkerton, July 24, 1973: represented by Mayor, Mr. Arthur Brown, Mr. Walter Marshall, Mr. W. Cox, Mr. C. Heillgers, Mr. G. Tremain, Mr. Neil MacDonald, Mr. Jim Bolden.

Bruce County Telephone Company, 31 July 1973: represented by President, Mr. Naldrett and 5 members of the committee.

Bruce - Grey Separate School Board, August 14, 1973: represented by Superintendent, Mr. Bill Brown, and some members of the Board.

Elderslie Township, August 16, 1973: represented by Reeve, Mr. Harvey Davis

Town of Chesley, August 17, 1973: represented by Mayor, Reeve, Councillors

Village of Teeswater, August 28, 1973: represented by Reeve, Mr. Albert Worrall, Mr. MacKenzie.

Town of Ripley, September 14, 1973: represented by Reeve, Mr. Clayton Nicolson, Mr. Bill McCreath

Huron Township, September 17, 1973: represented by Reeve, Mr. Russ Stanley.

MUNICIPALITY

DATE

TIME

Town of Port Elgin

July 9, 1973

2:00 p.m.

- There was a question as to Port Elgin being in a position to accommodate any additional influx based on our projected manpower forecast.

- Port Elgin have a poor industrial to residential tax ratio, 18/82 and they would require something in the order of \$100,000. difference to bring the ratio to an acceptable order (40/60).

- Port Elgin has been further hampered financially by the new assessment procedure. They have discussed the effects of Hydro's impact with municipal officials but with little result as yet.

- Population increase last year by 23 per cent.

- Since 1968, population has increased 59 per cent.

- Approximately one-third of the population are employed by Hydro.

- The Mayor said Port Elgin was heading for financial trouble if he did not receive some financial assistance from Hydro. In his view, Hydro is not a good corporate citizen in the minds of most municipalities.

- In addition to the financial burden created by increased growth, there are numerous social implications, for example, the town has garbage disposal problems. It was suggested that Hydro should work with the municipalities in a common effort to resolve community problems such as garbage disposal, electricity supply, recreation, (town predicts the need to build a new arena facility as existing use is pushed to the limit), water and sewer facilities.

- If Hydro does not provide help, the town may eventually have to refuse to accept any further growth which would affect our ability to house new employees.

- Mrs. Steeves expressed concern about the town over expanding to accommodate periods of peak work force. Also wanted to know if Hydro ever faced this problem at other locations and what we had done to resolve problems there.

- Port Elgin presently have within the town limits, about 700 potential lots to develop and about 160 home units becoming available in the immediate future.

- The town has also been asked to consider a 600 lot subdivision to the south in Saugeen Township, which they would be required to service.

- Bill Coulter mentioned that the County is developing an overall plan which will preclude the possibility of housing spreading to the rural areas. Thus, it was pointed out, that we will be dependent upon the existing communities to provide us with necessary housing for our employees.

- Kincardine have asked Port Elgin to consider that they undertake an impact study relative to the interest of both towns. We advised them of our intended impact study and suggested that this might be undertaken together.

MUNICIPALITY

DATE

TIME

Bruce Township

July 9, 1973

8:30 p.m.

- Mr. Tennyson wanted to know what percentage of the Bruce Nuclear Power Development employees are female. D.E. White to provide information.

- Mr. Tennyson indicated Bruce Township have received 10 per cent of the population influx, but part of this is due to lower income and retired people seeking less expensive accommodation in the rural area.

- The Reeve asked if there was a possibility of Hydro working in conjunction with the County Planning Committee to undertake an impact study in this area. He indicated he felt it was essential because "you can't pick figures out of the air to justify the effect". We agreed that we would meet with the County Planning Committee regarding this.

- Council requested further information about the property Hydro was seeking and this was explained by Don Fraser. There was no concern expressed about the areas mentioned.

- Surfacing and maintenance of roads is the biggest problem facing the township. They wanted to know what effect the expansion and Hydro acquiring the heavy water plant from AECL would mean to our existing road agreements. The township lacks a good supply of gravel and Mr. Hutton asked if it was possible for the township to acquire the rights to the gravel in the property purchased by Hydro. Mr. Estey explained that this would be something we could take under advisement.

- Asked if Hydro intended to develop temporary housing to get us over the peak.

- The Council seemed somewhat disillusioned by the inability to process zoning and other municipal procedures through municipal affairs and other provincial bodies.

- Mr. Hutton asked if the safety consideration would change with additional heavy water plants, was there a change in the ruling recently and whether we would provide him with an explanation of events leading to Inverhuron Park, as he was getting numerous questions from his constituents and because he also lives up the road from the Park. Mr. Horton replied outlining the details relating to the AECL siting requirements and each member of the Council would be provided with a question and answer sheet distributed to the local residents.

- We were also asked about the signs and the increased traffic on the side roads, which Don White agreed to look into.

MUNICIPALITY

DATE

TIME

Town of Kincardine

July 10, 1973

8:30 p.m.

- The overall feeling of Council was expressed by Charles Mann who stated "renumeration to Kincardine, for being a dormitory town, is very minimal". Kincardine has no industrial assessment and is therefore looking to Hydro to offset this problem.

- Town generally is in good shape as far as service, plans and potential lots are concerned.

- There are 800 units available for development. There seems to be no difficulty getting approvals.

- Other areas causing the town concern are:

- Traffic congestion. They are presently proposing a bypass of Highway #21 across the east end of Kincardine and wondered if Hydro could assist in supporting the town's need with the Department of Transportation and Communication.

- Wondered if Hydro was interested in the use of Kincardine Twp. and town air-strip, as support is sought in this area as well.

- The town and township are looking at the possibility of developing a community and sports complex valued at about \$1 million featuring two ice rinks, indoor pool and a 600 seat auditorium.

- Several questions were asked concerning Inverhuron i.e. why did Hydro change its mind about the Park. Some people have expressed concern about its closing. Closing of camping at Inverhuron may affect tourist business, although it was the Mayor's opinion that weekend campers generally don't spend much money in their community anyway.

- The smell from the heavy water plant operation sometimes carries as far as Kincardine.

- What are we doing about the odour problem. Is there any effect on the foliage.

- Is anyone keeping an eye on the effects of cooling water from our stations.

MUNICIPALITY

DATE

TIME

Saugeen Township

July 11, 1973

8:00 p.m.

- How are the property owners near the Park property in Saugeen Township going to be looked after?

- Is the new Park plan for certain?

- Who will be paying the taxes, as no one seems to be at the moment?

- Roads are the biggest problem for the township and the Council feels that more subsidy is needed to help them look after these problems.

- Does Hydro know anything about the provincial plan to develop a lake-line road from Port Elgin to BNPD?

- Traffic through the Township roads is increasing the maintenance cost. Is Hydro planning to provide financial assistance?

- Mr. Thede had the impression that Saugeen Township was paying over 47 per cent of the cost for education in the Port Elgin area and were being short changed by the Board of Education's apportionment in regard to the Hydro grant.

- Council also has the impression that the educational costs, although the overall responsibility of the County, are payed for the most part by the municipalities such as Saugeen Township and Port Elgin where the school facilities are being located.

- One problem faced in the area is the continuing struggle of those people not directly benefiting from the development.

- Will the expansion increase the wage standard even further and will Hydro do much of its hiring locally?

- Are we not going to gobble up our resources like the gravel and wood too quickly? All Saugeen Township gravel is going to BNPD.

- Are we going to sell the timber off the new sites? Will it be advertised?

- Concern was also expressed about the safety of the C.N.R. unit train, which in Council's view, should have some kind of luminous marking on the sides of the cars.

<u>MUNICIPALITY</u>	<u>DATE</u>	<u>TIME</u>
Bruce County Board of Education	July 12, 1973	11:00 a.m.

- The Board doesn't look at the expansion of the manpower forecast as being superimposed on a static situation, therefore, the net gain in terms of influx of people with school age children is somewhat offset by the changing status of children's ages in the County.

- General decline in birth-rate has somewhat decreased the need for childrer's rooms in the overall County, however, there is a problem of providing facilities in municipalities close in to the Bruce Power Development.

- The apportionment of educational costs has equalized throughout the County, therefore, the distribution of our supplementary grant to education is equalized throughout the County.

- SPECIAL NOTATION: The Board feels that the present formula of distribution for the Hydro supplementary grant is acceptable and a fair way of distributing this kind of assistance.

<u>MUNICIPALITY</u>	<u>DATE</u>	<u>TIME</u>
Town of Southampton	July 16, 1973	7:45 p.m.

- Are there any further plans for additional generation stations?

- Mayor Mercer personally thinks nuclear power is a good move, but from a physical point of view he is somewhat concerned about hydrogen sulphide and the transportation of it over land.

- Also feels that C.N.R. cars should be marked with some kind of luminous reflector.

- Southampton up until now, have had problems with service facilities such as sewers, but by the fall, will be equipped to accommodate new growth.

- Southampton is anxious to accommodate Hydro employees and wondered if we would look at the question of extending our "principal residence" locations to include Southampton.

- Council feel their Town has more to offer employees, for example, lower taxes and the best beach in the area.

- The present tax rate is 17.3 mills.

- Industrial to residential ratio 14/86.

- In view of the greater burden experienced by neighbouring communities such as Port Elgin, the Mayor is of the opinion that there will be a tremendous impact on Southampton because of expansion.

- There are presently 200 potential serviced lots and several more to which they could extend services.

- General feeling was that municipalities have basically received "peanuts" to offset the cost of being a bedroom community and Southampton will discourage growth unless assistance is provided.

- Raised the question of whether our housing assistance program was effective in keeping employees informed and equally fair to all municipalities.

- Does Hydro treat developers in any special way?

- Local residents (long-term) have suffered most from BNPD.

- Why weren't people advised earlier of our forecast?

- It was one Councillor's view that this was going to "shake the tar" out of the local industries.

- Hydro's supplementary grant is spread too thinly and therefore no one benefits.

- If growth rate of the municipality exceeds 8 per cent per annum then government grants are not provided.

- Expressed considerable interest and willingness to co-operate with the impact study.

- Suggested possible use of the railway site for employee transportation during the winter months.

MUNICIPALITY

DATE

TIME

Town of Tiverton

July 17, 1973

8:00 p.m.

- Strong concern about terrible odour coming from the plants.

- Will the sulphur dioxide eventually hurt the vegetation?

- What is the influx of people going to cost the people of Tiverton and other municipalities.

- Is Hydro going to do anything with roads and services? There isn't sufficient residential tax to permit growth.

- Traffic is a very heavy burden to Tiverton resulting in high road maintenance costs.

- The mill rate is 12.

- The Township gets 65 per cent of their road maintenance provided as a grant, whereas, Tiverton and other towns only get 50 per cent for road maintenance, 80 per cent grant on culverts, and a 50 per cent grant on storm sewers.

- The Town has had its lawyer seek assistance from Hydro for the Tiverton to Douglas Point road.

- More concern felt by Council as to the effect on the Town than on Inverhuron Park.

- Tiverton is presently expanding its water distribution system at a cost of \$114,000., but have no sewage facilities.

- Some large acreage is available for development but is not subdivided.

- There are presently 50 lots in Town and 35 lots border the Town.

- Will Hydro undertake its study in conjunction with other government bodies?

- Council suggested that Hydro use its influence and write to the Solicitor-General to provide the O.P.P. with sufficient information to warrant expansion of their force in this area.

- One of the biggest bottlenecks is the Highway #21 intersection at Tiverton and it would be most desirable to have it improved.

MUNICIPALITY

DATE

TIME

Town of Paisley

July 18, 1973

1:00 p.m.

- Will Hydro extent its assistance to other municipalities like Paisley?

- Paisley has been pleased with the type of residents (Hydro) that have come into the area in recent years and would welcome additional people.

- They have 13 potential lots.

- Water facilities are adequate but would have to expand with any apparent growth.

- No sewage system, but one likely in the future.

- Suggested that Hydro work through the municipal offices next year in accounting for the number of new households.

- Burden to expansion hits the older residents the hardest.

- Mill rate 16.66 and they have no industry.

MUNICIPALITY

DATE

TIME

Kincardine Township

July 19, 1973

8:30 p.m.

- How does Hydro plan to accommodate the work force during the peak periods?

- New people coming in and acquiring farm property are forcing the value of this property upward and making it impossible for full-time farmers to expand.

- Farmers are also hard pressed to compete for labour against Hydro.

- What does Hydro plan to do regarding the upkeep of the roads? Township feels they are being pounded out by employee traffic. Local people shouldn't have to foot the bill for people using it to travel to and from work.

- Government grants have been decreased and the upkeep of roads has been increased.

- Will the effect of the warmer water from the nuclear facilities in any way cause shore erosion such as we experienced this last winter when the temperatures were milder throughout.

- Is the odour going to get better or worse?

- What is the sulphur dioxide and hydrogen sulphide doing to the environment? It is apparently bad for farm crops such as alfalfa.

- Do Hydro intend to build additional steam plant?

- What is the voltage loss of transmission of power and could it be offset by some compensation to industry to locate near the Bruce Nuclear Power Development?

- Township mill rate 11.46.

- 95 per cent agriculture.

- Councillor Bill Luinstra, asked why Hydro misled the public last fall by denying that it needed the Park.

- Council expressed concern about the large numbers of portable schools and wondered if they should be taking the initiative with the Board of Education to ensure that portables are kept to a minimum.

- Approximately 600 students are presently at Kincardine-Tiverton Public School and there are 11 portables.

MUNICIPALITYDATETIME

Town of Walkerton

July 24, 1973

12:00 p.m.

- Generally in favour of development
- 180 potential serviced lots.
- 300 future lots within a few years with the provision of new services.
- 30 acres of commercial property available.
- Mill rate 19.8.
- 28 per cent is commercial.
- Mayor Brown wondered if Hydro could help to speed up the procedure at Queen's Park with the Ministry of Consumers and Commercial Relations, in respect to getting land title clearance. He feels it is a real bottleneck in terms of development.
- Walkerton are well equipped with schooling accommodation and offer the only Separate High School for the County.
- They also have new recreational facilities.
- Some concern expressed about temporary accommodation that will be expanded during the peak work force.
- They further feel that industry will not be attracted to the area unless housing is available.

COMPANYDATETIME

Bruce Municipal Telephone
Company
KINCARDINE

July 31, 1973

9:15 a.m.

- The Bruce Municipal Telephone Company is an independent Company comprising 6,000 telephone users and sponsored by 700 subscribers who in effect are the shareholders who own the Company.

- General opinion was that the Company shouldn't have to foot the bill for "temporary telephone service in the area caused by the influx of construction workers".

- They are concerned about being left with an excess of permanent unused facilities.

- Company would have to virtually double all its existing telephone exchange facilities in Port Elgin, Kincardine and Tiverton, in order to cope with the expected growth.

- Company would like to have Hydro identify its business needs as well, in respect to BNPD so that it can plan to provide the trunk lines to enable Bell Canada to service BNPD.

- Mr. Naldrett said the Company can't keep pace with the one and two line party systems being requested in the rural areas and therefore customers should be advised to expect "country service".

	<u>DATE</u>	<u>TIME</u>
Bruce-Grey Separate School Board	August 14, 1973	8:00 p.m.

- Short term growth is the major problem facing the Separate School Board.

- Although the supplementary grant was welcomed, it was not too significant in terms of the costs of establishing separate school facilities in the vicinity of the Bruce Nuclear Power Development.

- The Board are willing to co-operate with an impact study.

- Also requested that we consider including separate school notification on our advertising vacancies.

<u>MUNICIPALITY</u>	<u>DATE</u>	<u>TIME</u>
Elderslie Township	August 16, 1973	8:00 p.m.

- Council's view that BNPD has had a most dramatic effect on the farmers.

- It is difficult to get farm labor as most are running off to work at BNPD.

- This has a rippling effect, as the previously in-close farm dealerships no longer have the skilled manpower to repair farm equipment and the farmer has to go further afield to get his equipment repaired which costs him more money.

- Mr. Davis (Reeve) was of the opinion that Hydro should do something about poor work habits of many of its employees who tend to be boastful of the high wages they are earning and the little effort necessary to do their job, and they suggest that we should perhaps screen new employees coming into the area.

- Make better use of the manpower that is there now and this would generally improve the public relations image.

- Hydro shouldn't waste its resources and periodically it should auction off posts and other materials to the local people.

- Council are concerned about the transient labor which will be necessary to build the facilities and who may become the burden of the Townships when construction is completed if they stay in the area and go on unemployment insurance.

MUNICIPALITY

DATE

TIME

Town of Chesley

August 17, 1973

9:30 a.m.

- Local farm industries expected to go down the drain for a variety of reasons but in part due to BNPD.

- Council said that if they were going to be a dormitory Town, they needed to hold industry, get some new industry or some assistance.

- They feel somewhat neglected by the Provincial Government.

- Want to know if Hydro or the Government have any plans to assist local industry. General feeling that it was the government's responsibility.

- Movement of people like this should be given consideration. Council were doubtful of the accuracy of Hydro's estimate of new households.

- Council suggested that the impact study team meet with industry to discuss common problems i.e. labor.

- What environmental studies will be undertaken when Hydro builds additional facilities?

MUNICIPALITY

DATE

TIME

Village of Teeswater

August 28, 1973

1:00 p.m.

- That BNPD has had a noticeable impact on land prices in the Teeswater area.

- Farmers are leaving the area to work on construction.

- BNPD has also presented the Town's main industry the creamery with problems in getting local labor, as many are leaving to find employment on construction.

- Heavy traffic throughout the community is causing additional hardship to the taxpayers.

MUNICIPALITY

DATE

Town of Ripley

September 14, 1973

- 50 lots surveyed - going rate \$4,000
- no sewer
- water available
- provision for sub-division expansion
- growth has been good for Ripley
- Some trailer homes have been developed
- Hydro people have been good citizens
- Everything under control water-wise
- New firehall and fire truck (planned for fall)
- New medical centre (clinic) (planned for fall)

MUNICIPALITY

DATE

Huron Township

September 17, 1973

- What is the situation with the Park?

- It was suggested that Highway 21 by-pass in Kincardine be promoted by Hydro.

- Problems with roads:

upkeep, maintenance and 24 hr. snow plowing service too costly for municipality

- Wages - can't compete thus throwing the whole economy out of wack

- What about assistance for recreation?

- Mill Rate - 13.5

- 200 available lots

- unserviced

- cottage designated

Meetings were held with each of the groups listed below. In most cases the groups were bussed from the towns to the Bruce Nuclear Power Development Information Centre. With the aid of slides and brochures the proposed expansion was described.

A summary of the questions asked is included below. Answers were given to these questions and discussions were held about known and potential problem areas. In many cases the group benefited from the meeting by learning what the future requirements of the area would be and the potential business opportunities that would exist.

<u>DATE</u>	<u>GROUP</u>	<u>ATTENDANCE</u>
Nov. 22/73	Grey Bruce Real Estate Board	48
Nov. 28/73	Inverhuron Business Group	15
Nov. 28/73	Goderich Group of Concern	10
Dec. 10/73	Port Elgin Rotary	40
Dec. 13/73	Media Conference	25
Dec. 18/73	Tiverton Lions Club	14
Jan. 9/74	Underwood Women's Institute	22
Jan. 15/74	Tiverton Recreation Centre and Tiverton Ladies Auxiliary	17
Jan. 15/74	Tiverton Women's Institute	25
Jan. 16/74	Inverhuron Beach Association (Meeting in Toronto)	2
Jan. 17/74	Bruce County Board of Education	2
Jan. 17/74	Bruce-Grey Separate School Board	2

Jan. 30/74	Port Elgin Chamber of Commerce	31
Feb. 5/74	Kincardine Kinsmen (speaking engagement)	30
Feb. 6/74	Kincardine Rotary	35
Feb. 11/74	Kincardine Home & School	25
Feb. 13/74	Southampton Rotary and Chamber of Commerce	36
Feb. 20/74	Kincardine & District General Hospital Board	12
Feb. 27/74	Port Elgin Women's Institute	25
Feb. 28/74	Port Elgin Kinsmen & Kinettes	40

SUMMARY OF QUESTIONS FROM COMMON INTEREST GROUP MEETINGS

1. Is the impact study looking at the grants-in-lieu structure?
2. Is the present transmission line corridor large enough to accommodate both plants?
3. If Port Elgin - Kincardine and area combined, would we get more money from grants-in-lieu?
4. Why weren't housing arrangements made by Hydro before expansion began?
5. Community doesn't feel Hydro is pulling its weight. The million dollar contribution is not enough. (Note: this question was frequently asked before the announcement of grants to Port Elgin and Kincardine on January 17, 1974)
6. Do grants-in-lieu go only to Bruce Township?
7. What do you foresee for 1983 land and housing prices?
8. Is there any means for Hydro to aid communities in attracting industry?
9. With expansion, is any one planning for more school facilities?
10. Has any consideration been given for a by-pass at Tiverton and improving roads that have been damaged by Hydro?
11. When construction is complete, will other industry fill the gap?
12. Is the same firm that did the original study doing this impact study?
13. Is the 5-mile area for safety? From H₂S only?
14. If there is no great danger, why do you need that much property for safety?
15. Why didn't the 5-mile radius take in Tiverton?

16. Will restricted zone affect what is in the area now?
17. Will this by-law affect land prices within the zone?
18. Who will operate Inverhuron Park?
19. Will buffer zone be extended with additional heavy water facilities?
20. Has Inverhuron Park been purchased?
21. Why isn't Ontario Hydro telling the truth about Inverhuron? (i.e. one year saying we won't take it, then turning around and buying it)
22. What causes releases of H_2S to air and water?
23. Do you have mobile H_2S monitoring equipment? How efficient is it?
24. Is it feasible, from a cost standpoint to completely eliminate the smell?
25. How many days during the past summer was the smell evident?
26. When you smell H_2S , how serious a health problem is it?
27. Is H_2S injurious to vegetation?
28. Why doesn't Hydro re-process "sour" oil?
29. Have you made a survey to see how far this odour travels?
30. Where is H_2S made?
31. What are the properties of H_2S ?
32. If you had a large H_2S leak, how long would the danger last?
33. Why was the smell bad around New Years?
34. Where do most of the smell complaints come from?

35. Is re-useable H_2S worth the money it costs to recover it?
36. Why isn't the oil train marked better?
37. Are there harmful affects from the thermal discharge of BNPD facilities?
38. How far is Pickering G.S. from the new proposed airport?
39. Is Bruce G.S. B the last facility to be built, ever?
40. Has Hydro ever considered setting up a trade school at BNPD?
41. Why expand BNPD? Why not move to another site where problems might be less?
42. How is Hydro controlling vegetation growth on transmission right-of-way?
43. What about refining spent fuel?
44. How is spent fuel stored?
45. Why is Unit 2 at Bruce G.S. coming on line first?
46. How efficient are the units at Pickering?

This part of the report describes the two public meetings and records the questions by the public. All questions were answered by Ontario Hydro staff except those directed to the Atomic Energy Control Board which were answered by Dr. D.G. Hurst, President.

Two public meetings were arranged and information pamphlets and notices of the meetings were sent to the residents and the non-resident property owners of the area. The meetings were also advertised in the local press and on radio and television.

The first public meeting was held in the Saugeen Central School Auditorium in Port Elgin at 8:00 PM on Wednesday, March 13, 1974. The second public meeting was held in The Kincardine Town Hall at 8:00 PM Thursday, March 14, 1974.

The weather was good for both meetings and both were well attended.

Mr. D.E. (Don) White, Community Relations Officer for Bruce Nuclear Power Development, was chairman for both meetings. A panel of Ontario Hydro personnel were available to provide explanations of the project and answer questions from the audience. Mr. White opened the meetings with a brief welcome message and described the following agenda:

- (a) Opening remarks and introduction of Mr. Jackson and the panel members followed by an explanation of public participation.
- (b) Invitation of prepared statements.
- (c) Question and answer period.
- (d) Closing remarks.

Mr. White introduced Mr. H.A. (Al) Jackson, Director of Generation Projects Division, and the panel: Mr. S.G. (Sam) Horton, Project Manager, Bruce Nuclear Power Development; Mr. E.P. (Elgin) Horton, Operations Manager, Bruce Nuclear Power Development; Dr. W.R. (Rae) Effer, Supervisor of Environmental Studies, Generation Concept Department; and Mr. D.M. (Gregg) Hayter, Project Study Coordinator for Bruce Generating Station B.

Mr. White stated that there were other people in the audience from Ontario Hydro, Atomic Energy of Canada limited, Lummus

of Canada Limited, The Atomic Energy Control Board and possibly some from the Ontario Government Ministries who may be called on to assist in answering questions.

Mr. Jackson explained Ontario Hydro's program to hear and respond to public concerns before applying for approval of the proposed generating station and heavy water plants.

Mr. Hayter, with the aid of two slides described existing facilities on the site and the location of the proposed new facilities. He noted that additional steam required for the proposed heavy water plants would be supplied by the nuclear generating stations. Additional oil-fired auxiliary steam plants would not be required.

Dr. Effer presented the highlights of the two environmental assessments.

Mr. Horton presented a status report on the impact of the expansion of the community. This report touched on the major concerns identified during discussions with the people of the immediate and surrounding communities.

Mr. White explained that the meeting was being taped and that all questioners should go to the microphones placed in the aisle so that the questions could be heard clearly.

Next, written briefs, and statements were invited. The briefs submitted were concerned with the transmission-line corridors and with the expansion of the nuclear power program generally. There were no briefs submitted regarding the environmental or safety aspects of this specific expansion nor were there briefs on the local community impact.

Prior to the question period it was explained that each question would be written down and projected on an overhead screen to ensure that the question was clearly recorded and understood.

7.2 QUESTIONS ASKED AT THE PORT ELGIN MEETING, MARCH 13, 1974

1. What will be done regarding the impact of the expansion on hospital facilities?
2. How does Ontario Hydro propose to get the energy conveyed from the Bruce site to the areas where it is required?
3. Can people owning property along the lakeshore in the controlled development zone expect lower taxes?

4. How does Ontario Hydro establish power production requirements?
5. What is the fine back ash falling around the cottage on the 8th of Bruce and will it affect the pasture and growth in the area?
6. What is being done in wildlife management and conservation in the construction area?
7. Does Ontario Hydro encourage new business to move into the area to relieve the tax burden on the towns?
8. Could someone clarify the number of reactor units that are on the site now and the number that are planned?
9. After the heavy water plants are supplied, how much energy will be moved out to markets and where are these markets?
10. Does it matter where the power enters the grid -- is this of any importance?
11. In what general area is the power used?
12. Why locate generating stations up here so far away from the borders of the United States where this power is obviously intended to go?
13. Why not put the plants where it would be more efficient for you to transfer power to where it is needed?
14. Could Ontario Hydro embark on a conservation of energy program in Ontario to reduce the demand by 10% so that this new plant would not be needed?
15. Does Ontario Hydro in the future plan to involve the public at an earlier stage in planning so they can actually make some input on the way loads are forecast?
16. Is it not better to build a plant at Sarnia for Sarnia and London than to build it up here and transport power east and then south -- if it was at Sarnia it would be closer to the States if some power is going there?

17. Hydro has announced plans to expand Bruce so what's the use of people getting involved -- Ontario Hydro will do what they intended to anyway?
- 18A. How long does it take to build a powerline from Bruce to London?
- 18B. How much does it cost?
19. What was the meaning of the news broadcast over Wingham television that Ontario Hydro cut two billion dollars out of the present generation program?
20. Is Ontario Hydro prepared to consider the alternative proposals?
21. If we don't get this power out of this plant into the Ontario Hydro grid system, how can we get it back down the concession roads, back down the streets of Port Elgin?
22. Has Ontario Hydro at the present time authority to build units 5 to 8 and in what years would they be built?
23. How long will units 5 to 8 supply the need?
24. Will units 5 to 8 satisfy all projected grid requirements into the 1990's?
25. Is there a Bruce Generation Station C planned for the site at the present time?
26. If Ontario Hydro only needs 500 feet of corridor to take the power out of Bruce, why is Ontario Hydro expropriating land which they do not know whether they will ever need?
27. How are the energy needs of the future determined? Does Ontario Hydro simply take the present growth and project it over the next thirty years? How much Hydro do we need? How are these questions being made public?
28. Is the radioactive waste management area where the radioactive waste is disposed also referred to as the cemetery?

29. Has there been any leakage whatsoever from the waste management area?
30. Has there been any digging in the area in the last while to correct the leakage situation?
31. What is Ontario Hydro doing with the radioactive waste from the plant?
32. Is the cost of \$500,000 per mile for a five-line corridor?
33. Why does Ontario Hydro need three lines when all the proposed power into the 1990's can be carried out on two?
34. What would be the cost per mile to put the transmission lines underground?
35. Other countries put transmission lines underground -- what is done to control the amount of heat produced?
36. Is there a problem if you cool underground conditions to 200° F or 300° F below zero?
37. Is underground vs. overhead transmission lines really an economic matter?
38. Does the cost figure of 20 to 30 times overhead transmission lines apply to putting the line underground through fields or residential areas?
39. Why does Ontario Hydro not have a uniform system of pricing the corridor land which they are buying?
40. How are municipalities expected to plan adequately for impact of population in services demands if they don't get information as to what is planned?
41. Will the consultant study by M.M. Dillon Ltd, which is more likely to be an accurate reflection, be used as an impartial study or does Ontario Hydro intend to give credence to what the local officials ask for?
- 42A. How much do Ontario Hydro employees participate in the community?

- 42B. Why don't Ontario Hydro personnel get involved in various community efforts, like the Chamber of Commerce and so forth?
- 42C. Why not set up a public relations booth in town?
- 43A. Who writes the reports of the meetings and where do these reports go?
- 43B. When people ask questions at these public participation meetings, what kind of action can be expected or is there any use in asking questions?
44. How does Ontario Hydro intend to overcome the feeling that people in the community have about not believing thoroughly in what Ontario Hydro is doing?
45. Will the reports that Ontario Hydro submits to the Minister of Energy be made public?

1. How is nuclear waste stored safely?
2. Is it true that half life of plutonium is 24,000 years and that it takes 800,000 years for it to reach radioactive levels of natural uranium? (Yes) Is it not preposterous to presume that we will have a society that's stable enough to manage these radioactive wastes over this period of time?
3. Why is low population density required within 5-mile radius of nuclear operation?
4. In order to serve the power markets this product electricity must be shipped to the market area. Why, therefore, build them in the lowly populated hinterlands of Ontario instead of along the densely populated areas of the metropolitan corridor adjacent to Toronto?
- 5A. I want to know why Hydro isn't responsible for coordinating their efforts and planning into the same time frame that is required by the municipality?
- 5B. What restrictions would be placed on land purchased within the restricted land use area in Kincardine Township?
6. Further new capacity will be required to be brought into service in 1982 at the new site. Where is the new site?
7. Why weren't concessions identified in Kincardine Township -- because there is no official plan?
8. Does Hydro plan in future to involve public at a stage so they can have some input where there has been no decisions made as to where a plant might be located?
9. Will Ontario Hydro be changing its method for determining whether or not expansion is needed and will those changes result in anyone who is not a Hydro employee being involved in those decisions?
10. Have people been given chance to question the need for the plant?
11. Is life expectancy of nuclear station 30 years?

12. Do you know how many years it would take before plant would have to be shutdown?
- 13A. Why does the plant become in-operative? Would you then have to find new sites? What happens to community when the plant becomes in-operative?
- 13B. Can radioactive levels have anything to do with the useful life of the plant?
14. What contingency plans have been made for the event of a serious accident and what are the probabilities for a serious accident?
15. What are the specific health effects of H_2S and SO_2 at levels greater than the regulatory levels?
16. Does manpower forecast include families? What percent of these would be i.e. wives, children? Have you considered the effects of this influx of population on the community?
17. What happens when the majority of the work force leaves?
18. What precautions have you taken to secure the plant from an irresponsible person who would deliberately quote some crazy reason and try to sabotage it?
19. What are the volumes of radioactive material or waste and spent fuels that you will generate per year when you get in full operation?
20. What is the lifetime of the storage areas that you are now building for radioactive waste?
21. Has there been any leakage and how much from these waste management areas?
22. Is Hydro intending to build more reactor units than the proposed four at Bruce G.S. B without permission?
23. Why is Hydro asking for more land for more 500 kV lines than can be used at this time?
24. (A) Is the area within the five-mile radius going to be a real hazard when they start up these new heavy water plants in the next few years?

(B) If you restrict residential development because of the hazard, why do you still allow the present homes and residents to stay there?

(C) Will the Atomic Energy Control Board allow or regulate the present residences during the startup or will they regulate them after these three new plants, for a total of four, are completely on stream?

(D) If I have to sell will I get a fair price? Will Hydro have some allowance if I'm forced to move?

(E) Does Hydro have a quiet plan to gradually assimilate Inverhuron by their current policy of buying cottages privately from owners rather than expropriation?

(F) Is it not serious to put 5000-6000 tons of hydrogen sulphide up the stack per year?

(G) Will the amount of hydrogen sulphide and sulphur dioxide emitted from the auxiliary steam plant be multiplied by three when plants B, C & D come into operation?

25. With the poliferation of nuclear power stations on the Canadian and American shores of the Great Lakes, does Hydro believe that this will produce no damaging effects on the environment?
26. Could the vast amount of heat discharged from the nuclear power plants to the lakes be used for other purposes?
27. Who gave Ontario Hydro permission to remove deuterium from the lake and who is going to replace it and how? Does Ontario Hydro know what harm is being done?
28. Has Ontario Hydro put any tracers up the stacks so they will know where the currents are carrying the pollution and where it is falling?
- 29A. Could Ontario Hydro elaborate on what is meant by "with some development and support" as stated in paragraph 3 of section 3.4 on page 16 of the synopsis?
- 29B. When will the impact study report be completed?
- 29C. How much financial assistance will there be?

- 29D. When will the financial assistance be made available?
- 31A. Is Hydro in its negotiations with municipal government or TEIGA going to make representation on our behalf to have assessment decreased or mill rate decreased because of restrictions imposed?
- 31B. Must each individual cottage owner go individually to the municipal governments if land values decrease or will Ontario Hydro make fair representation?
- 32A. Will the Dillon Report short-circuit the long drawn out provincial approval process which we have experienced in the past on community projects?
- 2B. Will Hydro assist in clearing the way for approvals of community projects through Queen's Park?
33. Has Ontario Hydro prepared the studies and presented this to the ministries?
34. Is there a deadline for the feedback or briefs?
35. Is there a way of having input into the Dillon Report?

In addition to the briefs and Ontario Hydro's interaction with municipal officials and general public relations activities there has been correspondence in 1974 with several property owners of the area which we consider part of the public participation associated with the proposed expansion of facilities. Correspondence with the following are included in this category:

Mrs. James H. McCarthy of London, Ontario, an Inverhuron Beach cottage owner;

Mrs. E. Lockhart of London, Ontario, a cottage owner;

Mr. R. Merkley of London, Ontario, a cottage owner;

Mr. W. Runge of Waterloo, Ontario, a cottage owner;

Mrs. Muriel E. Turner of Brampton, Ontario, a cottage owner;

Mr. Harry Girling of Windsor, Ontario, a cottage owner;

Mr. Robert G. Williams of Charleston, West Virginia, a cottage owner;

Mr. Harold Skelding of Gananoque, Ontario, a cottage owner;

Mr. R.G. Norris of London, Ontario, a cottage owner;

Mr. Al McLellan of Port Elgin, Ontario, a bank manager;

Mr. and Mrs. William Ball of Seaforth, Ontario, property owners;

Mr. Allan C. Bennett of St. Catherines, Ontario, cottage owners;

Mr. R.J. Thompson of Woodstock, Ontario, a cottage owner;

Mr. R.G. Thompson of St. Thomas, Ontario, a cottage owner.

The concerns expressed by three or more of the writers are listed below. In all cases the letters were answered.

- (a) The interpretation of the controlled development zone around the heavy water plants, especially in regard to property severence and property values.
- (b) The recent trend to increasing property taxes on summer resorts.
- (c) The odour problems of last summer, their expected trends and the effects on property values.
- (d) The long term expansion plans for the Bruce Nuclear Power Development and effects of industrial development on the resort nature of the area.
- (e) Interest in selling property to Ontario Hydro.

Ontario Hydro has received the following briefs which are included in a following section as numbered below:

- | | | |
|----|---------------------------|---|
| #1 | by Mr. J.W. "Pat" Daunt | R.R. 2, Gorrie, Ontario |
| #2 | by Mr. Berton Hodgins | Chairman of the Bruce-Huron
Corridor Negotiating Committee |
| #3 | by Mr. Berton Hodgins | Kincardine, Ontario |
| #4 | by Mr. Bruce Nunn | R.R. 2, Palmerston, Ontario |
| #5 | by Mr. Donald S. McKee | Goderich, Ontario |
| #6 | by Mrs. Mary Ann Shanahan | Goderich, Ontario |
| #7 | by a protest group from | Goderich, Ontario "A Case for
Alternatives to Nuclear Power" |

The first four briefs protest the use of #1 and #2 agricultural land for the transmission line corridors from the Bruce site to the southern Ontario grid. Portions of these transmission-line corridors must be available before 1977 to deliver electrical energy from Bruce Generating Station A to Ontario Hydro's grid. The selection of the transmission-line corridor has been the subject of a separate Ontario Hydro study.

The briefs are included here because they were submitted in connection with the public meetings held on the expansion of the Bruce Nuclear Power Development.

RESPONSE TO BRIEFS NOS. 5, 6 AND 7

Ontario Hydro has reviewed these three briefs from a group in Goderich who are generally opposed to the expansion of Canada's nuclear program.

This Ontario Hydro response attempts to correct some of the misunderstandings about the nuclear industry which are contained in these briefs.

Nuclear power is unique in that large quantities of cheap electricity can be generated and used without the geographical constraints which may be imposed on other sources of electricity. Detailed comparisons of power options that may be available in a specific country must be made by the electricity systems planners in order to arrive at the best long term overall result.

The expansion of Ontario's nuclear power development program has not been spontaneous. Fortunately the foresight and labour of twenty years of research and development has placed Ontario in a position at this time to offset the shortage of fossil fuels by using our indigenous supplies of natural uranium for electrical energy production.

Comments on most of the areas of concern presented in the briefs are discussed in the sections which follow.

Competitive power costs:

The total unit energy cost of the electricity produced by the Pickering Generating Station is significantly less than that for the comparable coal-fired Lambton station. Moreover, as the coal for the Lambton station is imported from the U.S.A., both its cost and availability are likely to be affected by the current energy crisis in that country and increased coal prices will have a marked effect on the cost of the electricity produced.

Pickering, on the other hand, uses Canadian uranium, which is in plentiful supply and is not expected to escalate in price at the same rate as the fossil fuels. Thus, the generating costs of CANDU (Canada Deuterium Uranium) power reactors of the Pickering type are not as sensitive to increases in fuel costs as are those of the fossil-fuelled stations. In addition, the present generation of CANDU power reactors offers good potential for further savings in capital and operating costs through refinement of the design.

The thirty year plant life referred to does not define the end of the life of a plant. Thirty years is used for economic purposes and is similar to a mortgage period. The life of the plant is dependent on how long it is economic to operate and maintain the plant to the high safety standards which we insist on.

Fuel costs are insensitive to location:

The nuclear power option is the only one in which fuel costs are virtually insensitive to the location of the plant with respect to the fuel source. It has been calculated, for example, that if nuclear fuel were fabricated in Halifax, packed and air freighted to Vancouver for use, the transportation charges would add less than 2/1000 of a cent per KWh to the cost of the electricity generated in Vancouver.

Abundant fuel supplies:

It has already been pointed out above, that there is an abundance of Canadian uranium. However, the CANDU power reactor offers the user a range of fuel choices which are capable of extending its fuel resources for an indefinite period. These range from the use of natural uranium, through the re-cycling of the plutonium that is produced, to the thorium/uranium fuel cycle. It has been calculated that under these conditions, CANDU power reactors can meet Canada's needs for electrical energy for many centuries.

Minimal environmental impact:

It has been stated of the nuclear industry that, in no other such enterprise, has safety been the paramount consideration from the outset. Furthermore, except with respect to the purely commercial aspects of nuclear power, few other industries have benefited from the large-scale international collaboration that was fostered by the various national and international agencies. As a result, the science and technology relating to the peaceful uses of atomic energy has become an open book and it has been possible, as never before on this scale, to identify the risks, to quantify them, to set standards and generally to ensure that the commercial development of nuclear power would meet the standards of an environmentally conscious era.

Hence, the major countries that have acted to secure the benefits of nuclear power have established national regulatory authorities, which alone possess the power to license the siting, construction and operation of nuclear facilities and whose standards are based on internationally recognized recommendations which represent the consensus of the informed opinion of the foremost authorities in the world. In Canada, for instance, the power authorities who operate nuclear installations have to comply with rigid safety standards, the enforcement of which is supervised both by the provincial authorities and by the independent federal authority, the Atomic Energy Control Board (AECB). The environmental aspects of the operation of CANDU nuclear power station compare more than favourably with those pertaining to fossil-fuelled stations.

Studies of the environment at our existing thermal generating stations have been going on for years and have indicated no detrimental effects due to the waste heat discharged.

During operation of the proposed Bruce Generating Station B the thermal discharge into Lake Huron will be dissipated to approximately 2°F above ambient lake temperature within three miles of the point of discharge.

The comparison of Pickering's rejected heat with boiling water is very misleading. The maximum temperature rise for cooling water is limited to 20°F.

If all the projected thermal stations to the year 2000 for both the United States and Canadian shores of the Great Lakes were in operation and used lake water for cooling, it has been estimated that the changes in the temperature of the lakes would be small compared to annual variations.

It is true that there are alternate methods of dissipating waste heat in closed cooling systems and cooling towers. The necessity of these alternate methods has not been demonstrated by deleterious affects to the environment of thermal discharge to lake water. It is quite possible that there would be undesirable environmental affects with the use of cooling towers. There is also an economic penalty.

Some Considerations of Benefit vs Risk

With regard to the risks involved in further nuclear expansion at this time and even making the most pessimistic assumption of a linear relationship between radiation dose and effect, the exposure of the public from the operation of all of the present Ontario Hydro's nuclear stations for 50 years is unlikely to produce a single radiation induced fatality. This has to be compared to the cost we pay in human lives for other of man's technological benefits such as automobile use. This costs us over 5000 lives annually in Canada. The following table gives a measure of the risk of various activities so that the risk to the public from chronic radiation exposure from nuclear power station operation may be viewed comparatively.

<u>Activity or Hazard</u>	<u>Relative Fatality Risk to Those Engaged in Activity</u>
Water Sports (drowning)	3
Smoking	1.2
Natural Disease	1.0
Driving a car	1.0

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Smoking	1.2
Natural Disease	1.0
Driving a car	1.0

Pedestrian	0.13
Home Accident	0.03
Choking on Food	0.02
Exposure at Boundary of Nuclear Station (10 mrem/year)	0.0001

The benefits of nuclear generation are clearly that Ontario Hydro can supply the large quantities of energy required to meet the future loads at an acceptable cost with a minimal effect on the environment. This will assist in supporting the society which is determined through our governmental processes.

Where CANDU power reactors are operating or under construction, the purpose is to obtain an assured supply of power that will continue to be cheaper than the power produced by alternative systems. The success of the Pickering Generating Station is confirming that these expectations will be achieved.

The following are some additional benefits that accrue from Canada's nuclear program:

(a) The evolution of the required scientific and technological base to put Canada in the forefront of the international effort to develop the peaceful uses of nuclear energy.

(b) A new and uniquely Canadian nuclear industry, with the capability of marketing a proven and highly successful reactor design both at home and abroad.

(c) The production of research reactors, radioisotopes, irradiators and cancer therapy units, for the domestic and world markets.

(d) The ability to sustain and expand Canada's position in the nuclear and allied fields.

Radioactive Wastes, the Storage of Spent Fuel and the Problem for Future Generations

Spent fuel can be stored safely using technology which is available today and ultimately will be disposed of safely. The management required for spent fuel in the future has been estimated to cost only a

fraction of one per cent of the energy cost. Recycle of usable material would, of course, reduce the overall cost. Rather than a burden to future generations it is more likely that the spent fuel will have economical benefits for the fuel cycle in present and future reactors.

The safe storage of radioactive waste is a simple problem requiring very little engineering and effort and should not present any problem for future generations.

Permissible Levels of Exposure to Ionizing Radiation

The International Commission on Radiological Protection conservatively assumes that any exposure to ionizing radiation entails some risk of deleterious effects. However, it is not true that "A very definite correlation has been established between the incidence of such diseases as leukaemia, cancer, etc., and the levels of natural radiation to which the inhabitants of an area are habitually exposed". Inferences on the effects of radiation at low dose levels have been made on the basis of extrapolations from population groups exposed to very high acute doses of about 100 rads, or 1000 times annual background levels.

It is not assumed that natural background radiation is safe or harmless. However, doses arising from the operation of nuclear power stations are a very small percentage of that arising from natural sources and hence are judged by world experts to represent an acceptably small risk.

Permissible levels of exposure to ionizing radiation for occupational workers have not been reduced since 1956. These levels are some 1000 times higher than the maximum dose that is likely to be received by any member of the public due to the operation of a nearby nuclear generation station. There is no evidence of excess leukaemias or other cancers in populations receiving doses within present occupational limits.

Occupational dose limits are 5000 mrem/year to critical organs and follow the recommendations of the International Commission on Radiological Protection. Despite the fact that the risk resulting from such doses is low, Ontario Hydro acknowledges that it may exist and adheres to the general recommendation of the International Commission on Radiological Protection that "radiation doses should be kept as low as is readily achievable".

Releases of Radioactive Isotopes

The statement about the release of 1% of radioactive isotopes is quite erroneous. Nuclear power plants operated by Ontario Hydro do not release to the environment even one millionth of one per cent of the radioactivity produced annually.

Under releases it is stated that the releases from the reactor in operation are "none-the-less significant". This is not so. The releases to the environment from large stations such as Pickering are estimated pessimistically to give a dose to a person continuously sitting on the station boundary fence of a few mrem per year, considerably less than is received as a result of living in a brick house as compared to a wooden one, or the normal variations in natural background radiation at any one location.

The permissible release levels are set on a site boundary basis. It is safe to live at the site boundary of any project regardless of the number of nuclear units on that site.

Tritium Releases to the Atmosphere

The significance of tritium releases must be assessed in terms of the resulting dose to members of the public, not just in terms of the number of curies released. Because of the nature of the tritium decay scheme, involving only the emission of a very low energy beta particle, the resultant dose per curie released is very small.

Estimates of the total dose from tritium in the year 2000 indicate that it would be of the order of one hundred thousandth of the natural background dose, i.e. approximately .001 mrem.

It is difficult to understand the basis for the charge that "tritium releases monitored at Pickering and publicized are obviously misleading".

The publicized 1972 tritium release information from Pickering is factual, describing station performance at this point in time. Paper CNA 73-303 by W.M. Campbell, "Waste Management in the Nuclear Program", when tabulating 1972 data specifically notes that system tritium levels will increase with time, and that therefore tritium releases can be expected to go up. As outlined above, the dose consequences of such releases are still very, very small and indistinguishable from natural variations in total background dose rates.

The statement in regard to diffusion of tritium is true but the amount diffusing is a very small fraction of the contained mass in any normal sealed container. In any case the tritium we handle is largely in the form of water and the statement is not applicable.

Siting of Nuclear Power Plants

It is not a policy to locate nuclear generating stations remote from areas of major consumption. For example, Pickering Generating Station is located near Toronto and it is now proposed to double its capacity. We attempt to match the generation with load growth for various parts of the province. Ontario Hydro builds on the

sites which it has available to place the generation in service by the time it is required.

Transmission lines will be necessary to transmit power from any power station to the Ontario bulk transmission system. It is desirable to minimize the length of these transmission lines and thus the cost of them within other constraints and economical factors. The transmission lines from northern hydraulic plants are long, but of course this was taken into consideration in the overall economic consideration of the cost of power from this generation source.

Alternatives to the Nuclear Program

For the large quantities of electrical energy required for Ontario in the immediate future into the 1980's there is currently no alternative to large nuclear generating stations except the burning of fossil fuels. Ontario Hydro's mandate is to produce power for the needs of Ontario. The concern for the minimal impact on the environment and minimal costs favour expansion of the nuclear power program at this time.

The following alternate sources of energy have been listed:

- Solar energy
- Wind energy
- Methane gas
- Heat difference conversion

As stated in one of the briefs, "the successful development of such power projects will be difficult, however, and environmental problems with some of them will be unreasonable to deny". Some of these alternate energy sources may find application when it can be demonstrated that they are practical for the large quantities of energy required. It may be that the cost of power from these alternative sources will far exceed the cost from nuclear power plants and, of course, this cost would be reflected in the rates to the consumer.

Ontario Hydro's Advertising Campaign Regarding The Use of Power

Ontario Hydro has an advertising campaign encouraging the wise, non-wasteful use of electricity and all six advertisements have appeared in each of 42 Ontario daily newspapers. Ontario Hydro has not used advertisements promoting electric home heating since the end of 1970. Some 263,000 copies of the "Wise Use of Electricity" booklet have been distributed to municipal electrical utilities and Ontario Hydro offices throughout the province for use in fulfilling the needs of conservationist exhibits, customer requests and mailings.

The balance of advertising in daily newspapers has carried messages primarily directed to informing the public on such topics as the hazards of inadequate, overburdened wiring and, from a corporate standpoint, the role of nuclear plants in our generation mix.

Plant Safety

Plant safety from accidents during operation: As stated in a previous paragraph safety has been the paramount consideration in the design, construction and operation of nuclear power plants.

In Canada, no practical realization of a proposed nuclear power plant can take place without the approval of the Atomic Energy Control Board.

For the purposes of safety assessment, all systems in the plant are categorized either as process or safety systems. Process systems are those required for normal plant operation, whereas the safety systems are those that are provided to control the effects of process system failures. The safety systems comprise two shutdown systems plus the emergency cooling system and the containment and have to meet the following criteria:

- (a) The safety systems must be independent of the process systems and be independent of each other.
- (b) Each safety system must have a demonstrated reliability greater than 0.997.

A large part of the safety analysis is concerned with accident analysis, in which the designer has to satisfy the Board that all conceivable accident situations have either been adequately safeguarded, or that they have a negligible probability of occurrence. Of these situations, the most serious, although it is also the most unlikely from the frequency analysis viewpoint, is the "loss-of-coolant accident". This postulates the occurrence of the worst possible rupture of the heat transport system and sets the design requirements for all four safety systems, so that systems designed to these requirements are more than adequate for all other process failures.

With regard to the possibility of the release of radioactivity, the most significant release that must be guarded against is the accidental release of the fission products in the fuel. Accordingly, no less than three barriers are interposed to prevent these products from reaching the public. They are:

- (a) the fuel sheathing, which is totalling sealed,

- (b) the reactor coolant system, which is maintained to low leakage,
- (c) the reactor containment, also maintained to low leakage

Plant Safety from sabotage and war: The organization chart of an Ontario Hydro nuclear power station, like every comparable establishment of importance, has a complement of security staff. Nuclear plants have sophisticated safety systems to guard against the ill effects of quite extraordinary accidents to the nuclear steam supply system which, in normal circumstances, have a very low probability of occurrence. Additionally, there are contingency plans which are designed to safeguard the public in the ordinarily almost vanishingly small possibility that they will ever be required.

In a nuclear station the power reactor is housed in a massive reinforced concrete structure, special precautions are taken to control movement in the area and it is protected by independent but interlocking instrumentation.

If the object of the sabotage is to expose the population to a large release of radioactivity, the provisions that have been described make it very unlikely that this would be achieved.

Public Safety From a Plant Accident

In Canada, a necessary pre-condition to the issuing of a licence for a nuclear power station is that the owner is required to file a contingency plan with the AEBC. This plan has to be worked out with the local county Medical Officer of Health, Police and Fire Department, is subject to annual review and may involve a simulated test. The details of the plan will vary from locality to locality and depend upon the type of reactor and local conditions.

Hindering and Misleading The Public

This report on public participation indicates the extent to which Ontario Hydro has involved the public for the expansion of the Bruce Nuclear Power Development. Sincere attempts have been made to answer questions and supply the public with information related to the nuclear power industry. In addition, Ontario Hydro and the Atomic Energy of Canada Limited have extensive public information programs to distribute information relating to the design and operation of nuclear power stations.

More recently, the Ontario Energy Board has been conducting public hearings about all aspects of Ontario Hydro's operation including investigations of the nuclear expansion program and the alternatives.

The Question of Demand

The demand for electricity is created by a society that uses electricity both for domestic use and in the process of establishing industries to supply the goods and services which form an integral part of our way of life. To suddenly change this integrated system by not supplying the electrical power could have disastrous economic consequences. It is the sincere desire of all responsible persons that natural resources should be used wisely.

The Moral Issue

The exploitation of natural resources the world over could be classified as a moral issue for it is certain that some resources are being depleted at an alarming rate for future generations. It has been scientifically evaluated that the use of natural uranium for power production is preferable to the depletion of precious fossil fuels which, perhaps, should be preserved for other uses. In any case the moral issue should be managed through the process of government which we have established in this country.

BRIEF #1, MR. PAT DAUNT

March 20, 1974
R.R. 2, Gorrie, Ont.

Mr. Don White,
Information Officer,
Bruce Generating Station,
Tiverton, Ont.

Dear Sir:

The Howlett report to the Solandt Commission begins, "Electric power is one of the foundations of the Twentieth Century way of Life. Without it Society would be the poorer. While some people are coming to doubt that the historic trend of power demands doubling every decade can be sustained, there is no immediate end in sight and Hydro proceeding, as it must, has prepared plans to meet these demands."

May I comment on this because this is the only reason given in that report for expansion program, of which we are a part. Electric power is one of the foundations of the 20th century, I agree. However there are other foundations, dating back into the ages, that are more important. Food has been and is the real foundation of all civilization. The quantity available and the quality, determine to a great degree, the level of that society, i.e. look at India, China, and nearer home some areas in that nation south of our border. Where there is a lack of food people are unable to develop fully either physically or mentally. For both the producer and consumer the time has arrived when priorities must be placed in their proper perspective. If food, the most important ingredient, in human survival, is to be available, the producer must be encouraged to farm the land that produces this food. He must be allowed to do this without interference. And above all the number 1 and 2 land on which this food is produced must be protected from expropriation and so called development. Today we are looking at abundance. Let's look into the future with some people who have greater insight than I have.

Dr. Norman Borlaug, 1970 winner of the Nobel Prize for Peace, emphasized this point, "Civilization as it is known today could not have evolved, nor could it survive without adequate food supply. Yet food seems to have been taken for granted by most world leaders".

Thus the essential priority of food and the production of food is starkly outlined.

Recently, while Hydro was starting expropriation proceedings of good farm land in this area, we heard Canada's Mr. Maurice Strong, head of the United Nations environmental secretariat,

warning us about misuse of our heritage. His report says and I quote, "A global picture of food scarcity is now emerging with disquieting implications both for hungry people and for world political stability. We have no safety margins left. Another international crop failure like that of 1972 or the recurrence of a dust bowl like that of 1932 in the United States could now, with scant reserves, trigger major regional disasters".

The United States Soil Conservation Service said recently that as of January 1, 1974, more than 6.6 million acres in a 10 state area from Texas to Montana were in condition to undergo wind erosion of top soil.

Western Ontario was developed during the past 100 years and let's take a look at where we are. We have a farming industry whose gross income makes even the biggest industry envious. Many local industries process the products of these farms and also supply the inputs which these farm businesses need. Then we have a very big tourist industry. Our lake front and the nearby towns are boom areas. These two industries complement each other.

So Hydro is going to improve them. Douglas Point and its Nuclear power plants smell at times worse than an outhouse at the bottom of the garden. Sulphur dioxide and hydrogen sulphide, along with radio active emissions are part of your program and are not acceptable. Their effect on agriculture can only be harmful.

From Douglas Point the power must go to where it is wanted. Common sense says to use less productive land for these transmission corridors. However you take your main corridor through some of the best land in Canada, land that is being farmed more intensively each year as the demand for food is increased.

I refer to your line from Bradley Junction to the Elmira area. Through Turnberry, Howick, Wallace, Maryborough, and Peel townships you want a corridor 600 ft. wide. 90%--95% is on number 1 and 2 land. This is what I object too, and the people from these areas object also. In spite of your remarks about safety factors this corridor will contain at least three 500 k.v. lines. The meetings held in this area indicate that the property owners on this area will fight your use of number 1 and 2 land, to the last expropriation, and rightly so.

On looking at soil maps and considering climatic factors, we all feel that this corridor should be located along side of Hydro's existing 230 k.v. line to Orangeville to a point (33) east of the Luther Marsh, then south through East Garafraxa (82)(83) to cross your 230 k.v. line to Kitchener. At this point your 230 k.v. right of way gets you to the Kitchener area, and south of here is the Limehouse crossing of the escarpment. To get to this point you will then have gone through some of the most unproductive land in Mid-western Ontario. I would suggest that if you pay these farmers as much for their land as you will have to give us here in the "United" townships they might even be glad to do business with you.

The Committee representing property owners on the Douglas Point to Seaforth route has suggested an alternate route using half as much number 1 and 2 land and twice as much number 4,5 and 6 organic land. This route is two miles shorter and would get the power to Seaforth, which is basically the purpose of any route. In the Seaforth area it would hook up with the existing 230 k.v. line and right of way.

I would like to comment on your statement that you can "farm the land under the towers". The better the land, the more problems we will have. In face of facts it would be impossible under some foreseeable conditions and uneconomic under others to farm this corridor land.

You cannot grow plants on a roadway or a travelled area. Some plants are affected more than others by traffic. Once through a corn field in July or August and you have no crop. Whereas a pasture field could stand traffic once a week in some months without too much damage.

The report to the Solandt Commission says and I quote you some of the comments.

A: "In spite of the plan to service by helicopter Hydro reserves the right to use the corridor for trucks and to transport materials and men for special services to tower lines. It is clear that major damage to crops will occur, when such services are carried out".

B: "Farming operations between towers will be slower and time consuming".

C: "Ceding title to lands for right of way means loss of title to part of a farmers industrial plant".

D: "We remove fences, fence rows, and stone piles to enlarge cultivated areas. The government encourages this by field enlargement grants".

E: "There is a very limited supply of class 1 and class 2 agricultural land in this province and with the many demands that are being placed for non-agricultural use of this land, i.e. residential and industrial development, transportation corridors, energy corridors, recreation areas. This Ministry of the Government is greatly concerned that there be minimal intrusion made on this high quality agricultural land for non farm purposes. We recognise that this line must be built. Our recommendation is that it be located through low agricultural productivity lands". (letter from H.F. Crown).

F: "In view of problems of North-south Hydro corridors, East-west corridors should avoid agricultural land".

G: "Surveys of public opinion obviously place the farm voice in an unfavourable position in deciding the choice. Yet farmers are the people whose livelihood is directly and adversely affected by Hydro lines passing through their farms, while many active conservationists live in urban areas that are in no way affected by the corridors".

Hydro over the years have been given arbitrary powers. They have the power to take our property. The expropriation act gives certain protection in the area of compensation. Hydro has found ways of using that act to deny me a hearing and therefore justice. Others are being treated in the same way and are being denied justice. Hydro does not intend to listen to us. It has one plan and one plan only. According to Hydro this plan stands or falls. This is unreasonable. If we are to make a contribution which is to the ultimate benefit of society, we need more scope than the simple choice of saying yes or no. Hydro powers of expropriation denies even us the right to say no.

If the above suggestions are not acceptable, then I and others ask for the opportunity to sit down with responsible Hydro officials and members of our government to discuss this problem. It is obviously a waste of time to discuss this matter with Hydro's Senior Right of Way Engineers, their job is at stake, their bias shows. Failing this or perhaps instead of this we ask that an independent study be made.

Yours very truly,

J.W. "Pat" Daunt

I'm a farmer. I farm my own land. It's a family farm. Hydro, I believe, is not going through my property. We're not quite sure, we have a little bit of difficulty with maps.

I speak as a concerned person that's looking to the future too with Hydro. Hydro is looking 20 years ahead. I think perhaps we all should look 20 years ahead and in the farming line if we look 20 years back see what we're had to do to produce the food that's needed today and then think what we're going to have to do to produce the food that's needed in the future. We have to have the use of Number 1 and Number 2 land. This is the prize land. This is where our good crops are grown.

Now when I speak here tonight I don't want to speak about barring Hydro corridors. When you've got the thing here it's been established it's got to go out. There are ways of getting this power to the market and getting it back, it's coming back now, without disrupting the land that provides you food and which will have to provide in the future.

I was very interested in the Solandt Commission. It was formed to find the best available route for 500 kV lines from Pickering to Middleport. That's from Oshawa to down below Hamilton. You have heard about it and I would like to read you the first paragraph. This is the introduction to the Solandt Report. In that paragraph they say, and quite rightly too, "electric power is one of the foundations of the 20th century life. Without it, society would be the poorer. While some people are coming to doubt that the historic trend of power demand doubling every decade can be substained, there is no immediate end in sight and Hydro proceeding as it must, has prepared plans to meet these demands".

Now I'd like to comment on this because this is the only reason given in that report about Hydro's programme and we are part of this programme. Electric power is one of the foundations of the 20th century. I agree to that but there are other foundations and some of them are a lot older and more important and I named the one "Food". It has been the real foundation of all civilization, the quantity available and the quality determined to a great degree the level of that society. You can just take a look at India and China and some areas in the States and you'll appreciate what I'm talking about. Where there is a lack of food people do not develop fully, either physically or mentally. For both the producer and consumer the time has arrived when priorities must be placed in their proper order. If food, the most important ingredient in human survival, is to be available. The producer must be encouraged to farm the land to produce the food. He must be allowed to do this without interference and above all, No. 1 and 2 land, the prize land on which food is produced, must be protected from expropriation and so called development. Today we are looking at abundance. It costs a little bit more but there is lots of it there. Let's look into the future with some people who have greater insight than I've got. Dr. Norman Borlaug, 1970 winner of the Noble Prize for Peace, emphasized this

point. "Civilization as it is known today could not have evolved, nor could it survive without adequate food supply. Yet, food seems to be taken for granted by most world leaders". Thus he emphasizes the star priority of food and the production of food.

Recently while Hydro was conducting the beginnings of expropriation proceedings in Wingham. Canada's Morris Strong, head of the United Nations Environmental Secretariat warned us about misuse of our heritage. His report says, and I quote, "A global picture of food scarcity that is now emerging with disquieting implications for both hungry people and for world stability, we have no safety margin left. Another international crop failure like that of 1972 or the reoccurrence of a dust-bowl like that of 1932 in the States could now with scant reserves trigger major regional disasters".

Today I read in the American paper, a report from Washington, and it said "Southwest Dry Soil in Danger". The U.S.A. Soils Conservation Service said recently that as of January 1, more than 6.6 million acres in a 10 state area from Texas to Montana were in a condition to undergo wind erosion to top soil due to lack of moisture. Your Dr. Morris Strong apparently knew what he was talking about.

Here in Western Ontario, this country was developed during the past 100 years and let's take a look at where we are. We have here a farming industry whose gross income makes even the biggest industry envious. Many local industries process the products of these farms and also supply the inputs which these farm businesses need.

Then we have a very big tourist industry. Our lakefront and the nearby towns are boom areas. So, Hydro's going to improve these areas. Douglas Point, its nuclear power plant smells at times like the worst in the bottom of any garden privy. We've got something to be proud of. We've got the smell of the biggest outhouse in Canada. I know they're going to improve it but I've heard those promises before. I'm very sorry to be synical about it but that's the truth.

What about all this clear cool water we've got to have to run the nuclear station and you admitted tonight, "it was good water"? When it goes back to the lake it is not cool, as to being clean and I mean this sincerely. I'd rather swim in the St. Lawrence below Montreal than swim at any of the beaches around here. You can wash that stuff off you but if you ever have a leak here it will not get away.

I again ask what are you doing with the radioactive waste from this plant? I didn't ask it before, I ask it now. What are you doing with the radioactive waste? I understand you've buried some of it. We hear its not behaving itself like it should. We face the possibility of becoming Canada's biggest radioactive garbage dump. You have all the stuff to get rid of. A very big tourist attraction.

Now you say we can farm land under these towers, that is not going to do any harm to us and I'd like to enlarge on this for the benefit the people who haven't a knowledge of farming like some of us who have to go out there and do the job. You cannot grow plants on a roadway. You can't grow them on a lane. Some plants are affected more than others by traffic. For instance, once through a cornfield in June, July, or August and you've got no crop where you've been. Pasture field can stand that more and I would say if you used the same track once a week it wouldn't do too much damage. However, constant use and you have no crop.

The report of the Solandt Commission made some very good points. I'm quite sure you people have read them but it says in one of them, I'm going to cut these short, but one of them: "In spite of the plan to service by Hydro helicopter, Hydro reserves the right to use the corridor for trucks to transport materials and men for special services to power lines. It is clear that major damage to crops will result when such services are carried out". That's an independent study saying what we've been saying, but Hydro says they'll lease it back to us and we can grow everything just as good as it was before. It won't. 'Farming operation between the towers will become slower and time consuming". That costs money. We just can't afford that. Ceding title to land for right-of-way will mean that we loose the title of part of our plant, of our industrial plant. In other words, we're over built for the amount of stuff we can produce. Right now we have moved fences and fence rows and stone piles to enlarge cultivated areas so they can be more economically worked. As a matter of fact, the government have a programme, a subsidization of grant programme, to encourage this, the object being again economy and worth.

From the Department of Agriculture, and they are a pretty unbiased source, they say to the Solandt Commission: "There is a very limited supply of Class 1 and 2 land in this province and with the many demands that are being placed for non-agriculture use on this land, that is residential, industrial development, transportation corridors, energy corridors, recreation areas, this Ministry of the government is greatly concerned that there be minimum intrusion made on this high quality agricultural land for non-farm use. We realize the line must be built. Our recommendation is that it be located through low agriculture productive producing land. That is basically why I am here tonight because we find that Hydro in our area, and they are definite on this, they are going to go through our township. It's 99.7% No. 1 and 2 land and no matter what we do or what we say, Hydro will not move out of our township. And that is where we've got to meet this extra food demand, out of lands like that. There are other ways to do this but we believe that we are not being heard.

In these corridors we face liability for damage to towers and believe you me when you're driving a 150 horsepower tractor with some of the implements that we've got to hang behind these things, we can damage these towers. And we're liable for them, so we don't want to be in that corridor. So that corridor is going to lie there without being used and that corridor takes 109 acres at 900 feet every mile. In our area takes about 76 acres per mile. It's quite a lot of land going out and it's No. 1 and 2 land, the land that we need to fill your shopping basket.

Now, one of our friends here is trying to make this point and we need friends. This is still on the Solandt Report, "Surveys of public opinion obviously place the farm voice in a non-favourable position in deciding the choice. Yet farmers are the people whose livelihood is directly and adversely affected by the Hydro lines passing through their farms, while many active conservationists live in urban areas that are in no way affected by the corridors". These people are organized better than we are. They can turn out 100 or 200 letters of protest. We're not organized and we couldn't do anything and we were not heard and yet Hydro had nobody in there to take into account common sense factors that I have been outlining.

I'm away from the Solandt Commission now those are somethings that were in it. There are my opinions, and I speak with the experience of farming land all my life and things I've seen as I go along. Over the years Hydro has been given more power than the police. They have. They have the power to take your property. The expropriation act gives me certain protection in the area of compensation but not as much as I'd like. Hydro has found ways of using that act to deny me a hearing and therefore deny me justice. Others are being treated in the same way and are being deprived of justice. Hydro does not intend to listen to us. It has one plan and one plan only. According to Hydro this plan falls or stands. They told us that at Wingham. They told the Energy Board in Toronto. They told them the same thing yesterday. It falls or stands. This is unreasonable. If we here tonight are to make a contribution which is to the ultimate benefit of society, we need more scope than the simple choice of saying yes or no. And Hydro's powers of expropriation deny me even the opportunity of saying no, I can only say one thing, yes.

Burton Hodgins, Chairman of the Bruce-Huron Power Corridor Negotiating Committee. I have a statement I would like to make. Ontario Hydro personnel have accused me of not making statements on these issues. This I now endeavour to do. I have been in direct contact with many Hydro employees during the last two years. In regards to this area and other areas I am convinced that Ontario Hydro has no intention of giving regard to farmers until compelled to do so and they have so stated. Ontario Hydro has neither the plan nor the authority to build additional units to Bruce Generating Station past the four 800 MW units which they propose to set in operation starting in the year 1981. Nor do they have the knowledge that any more are needed. There is one double circuit 230 kV powerline taking power from Douglas Point to the Orangeville area now. This, along with another double circuit 230 kV line and two double circuit 500 kV lines, are all that will be required to transport the power from Bruce Generating Station for now planned production. These three new lines can be contained in one 500 foot corridor. Therefore, there is no reason, nor has Hydro any right, to try to expropriate a 900 foot corridor through the townships. It has been stated and is a well known fact that the power have to be conveyed from Bruce to other points but it must be done with the least possible effect on the surrounding country.

Another question was asked last night, re Ontario Hydro raising the wage scale in Ontario. I understand the answer to be that the unions forced them to do so and I agree that this probably was right. But when this other question was asked, "Why were area farmers not made the same offer for property as Hydro is forced to pay in other areas, or a uniform basis of payment for everyone?" Don Fraser attempted to answer with the same old, scratchy, worn out record which he has memorized, that they have to use the formula of past scales in the area which was outdated in primeval times. One of his reasons is if Ontario Hydro offered Bruce area farmers the same amount of dollars per acre as property owners in other areas it would inflate land values here which is exactly what has happened with labour. Perhaps Don has not awakened to the fact that the property in this area is presently being inflated at a very fast rate and chiefly because of the effect caused by the influx of workers at Bruce Generating Station and their need for housing, plus the large amount of come easy money provided by Ontario Hydro as wages. Farm land is being bought up for the sake of a home usually at prices which a farmer or his son could not afford to pay for farming purposes. Very often this land is neglected and left out of production. I am concerned that our farming community has not been given its due consideration in the development of this large generating complex.

I'm a farmer and I'm following somewhat on Mr. Hodgins theme. My objection to the expansion is because of the participation that we are being forced into downstream. For approximately the last three years we've heard the prophecy of an oil shortage which until the late 1973 fell for the most part on deaf ears. Suddenly, it became a reality resulting in inconveniences, mass unemployment in some areas and a change in the life style of much of North America if not indeed the world. This crisis seems to be receding somewhat. However, the forebodings of an even more critical and depriving crisis is already looming on the horizon - the worldwide shortage of food. In many parts of the world attempts are being made to produce life sustaining food on land that we would consider marginal at the very best. I can refer to much of South Eastern Asia, India, Africa, even some portions of Europe. In the land I refer to, there is not even an infinitesimal amount of the number one and two land that we in South Western Ontario take for granted. This, coupled with their tremendous climatic disadvantages, makes us the envy of agriculturists throughout the world. With the already spreading drought in the United States Midwest and the lack of food reserves in North America it would take a relatively small disaster in North America to spread famine throughout the world as close as the year 1975. This makes it imperative that we preserve our number one and two land which is irreplaceable for the production of food to sustain our population and coincidentally to maintain our present standard of living.

Ontario Hydro has shown a preference for land throughout their corridors which fall in the number one and two category. We maintain this attitude must be changed if we are to remain viable food producers. Hydro has propounded that they do not remove this land from production. However this is not the case. There is a disruption of at least one to two years during construction during which excavation, concrete laying, steel transporting and erecting, etc. must take place, followed by a minimum of two years to get the badly displaced and compacted soil back into somewhere close to its previous capacity of production. This is exclusive of the irreparable damage that is done to the tile beds that we as farmers have spent years installing and paying for. A further hardship is created when we try to borrow the necessary capital at the bank, because our stock in trade is capacity to repay and this is predicated on the land that we own and have direct control over. This is like any business man trying to maintain a previous credit balance after having lost a percentage of his assets. A farmer with a mortgage on losing title to this land does not receive this money but instead, as stipulated by law, it must go to the holder of the mortgage. I would like to clarify that farmers are not puttering around their farms awaiting a speculator to pay us off for our retirement. As farmers, we are trying to maintain a profitable and a viable operation producing the most basic raw material required in this or any other country - food. All the inputs that have gone into this corridor study have been based on Hydro expansion and present agricultural practices. This is foolhardy, not taking into account the progress which we as agriculturists will have to make if the standard of living is to be maintained throughout the world. We currently produce more food per acre than the land produced as virgin soil and we must take into account the requirements that will be put on our shoulders to feed the world in the next twenty years. Thank you.

A PROTEST AGAINST FURTHER EXPANSION OF THE BRUCE NUCLEAR COMPLEX

As an informed citizen I am most strongly opposed to any further expansion of nuclear generated electricity anywhere in Canada for the following reasons:

1. While Ontario Hydro is attempting to give the impression of concern by some rather faint hearted advertising, in reality this body is working to get more industry and home owners etc. committed as large scale users of electrical energy - home heating, smelting, etc.etc.

2. Ontario Hydro's rate structures is geared to encourage the large wasteful user at the expense of the small economical user.

3. It is no less than immoral to:

- (a) Export low polluting fuels like natural gas, also hydro electric power and expand dangerous technologies like nuclear generated electricity.
- (b) Bequeath to future generations vast quantities of radioactive wastes to meet our present excessive and often frivolous energy needs of today.
- (c) Propagate the myth that nuclear reactors are clean and safe.
- (d) Claim that nuclear generated energy is economic and ignore many major items and costs such as giant government subsidies, perpetual waste storage costs, transmission costs, thermal pollution, and public liability insurance, etc. etc.
- (e) Expose citizens to the possibility of a national disaster in the event of war, sabotage, etc.

4. There is no such thing as safe levels of exposure to radiation, even natural background exposure is harmful. Significant increases in infant mortality, cancer and other diseases have been documented in populations adjacent to nuclear reactors.

5. The locating of two very hazardous technologies (production of heavy water and nuclear reactors) in the same area compounds the hazards many times.

6. No significant investments have been made by either the Canadian or Ontario Governments into developing alternative sources of energy.

Donald S. McKee
R.R. 4
Goderich, Ont.

5th February 1974

Brief to Ontario Hydro re proposed expansion of facilities at
Bruce Nuclear Power Development

I am writing in opposition to expansion of nuclear power facilities at Bruce Nuclear Power Development. While I am aware of our energy needs and of Ontario's desires toward independence in energy production, I think acceleration of the nuclear programme at this time is unwise and not in our real interests.

There remain too many uncertainties in the nuclear power programme, arguments advanced in defense of nuclear power are shortsighted and inconclusive, and reliance on nuclear power now will keep us from really solving our energy problems.

- I. There remain too many uncertainties in the nuclear power programme.
 - A. One outstanding uncertainty is the storage of atomic wastes. Those working in atomic energy, and the few informed laymen, know and admit that we are storing plutonium wastes that will remain radioactive for generations in storage facilities that will be long outlived by the plutonium. Proponents claim that the storage programme is reasonable because it is managed, and that as long as it is managed it is safe. I claim that because the storage programme must be managed, and managed by people yet unborn in a society which may be vastly different from ours, it is clearly unsafe. As long as the nuclear power programme necessarily commits the management of atomic wastes to not only our generation but to future generations as well, who were consulted on neither the ways we produce our energy nor on the ways we use it, the storage problem is clearly unsolved.
 - B. The claim that more is known about nuclear power than about most of society's previous energy ventures is misleading. Studies of projected safety are contradictory with opponents of nuclear power crying "unsafe" and proponents crying "the cleanest thing yet". And in any case, that safety can only be projected; we do not have sufficient history in nuclear power production to make real conclusions on safety. We have not been in the business long enough. And though our knowledge of the atom and its potential and effects has exploded in relatively recent years, science is still exploring the effects of radiation.

II. Arguments so far advanced in defense of nuclear power are shortsighted and inconclusive.

A. The argument that the nuclear power programme is in response to public demands for energy is misleading.

1. We are supposedly moving into atomic energy to meet our energy demands. Ontario Hydro says it is only responding to public demands for power when in fact those demands are partially created by advertising, in which Ontario Hydro plays its part. The very use of the word "demands" leads people to think of the "demands" as absolute and not arbitrary, and that they are all equally important. And the demands are, and have been, certainly created by the availability of energy. Though we do have real energy needs, when we speak of demands as we know them now, it is perhaps as accurate to say that energy has made the demands than that the demands make the energy.

2. The public has not been objectively informed sufficient to making a responsible choice regarding nuclear power. Advertising by Ontario Hydro in support of nuclear power is misleading and public relations films, with music and glowing descriptions, encourage passivity and complacency on the part of the observer. In advertisements, nuclear power is named our "cleanest known method of thermal generation". Failure to mention that atomic wastes are stored on site and must be managed contributes to the notion that cleanliness in the environment has only to do with smoke from stacks. Surely when we speak of cleanliness we must speak of atomic waste storage; no other known method of thermal generation leaves wastes as potentially dangerous and as demanding in vigilance as does nuclear power. Similarly the issue of possible alternatives has been ignored. The public does not know what it is choosing to accept and reject when it accepts or rejects nuclear power.

While we are all creatures of our culture and cooperate in the use and misuse of energy, I don't think it is unfair to say that the public has been hindered rather than helped in making a responsible choice in the matter of producing and using nuclear energy.

B. The benefits versus risk argument is fallacious.

The chief argument in support of nuclear energy is that the benefits outweigh the risks. The benefits are cited as high, the risks low.

1. In fact, the risks are not low. Even if the arguments put forth by proponents of nuclear energy on the safety of nuclear generation and the small likelihood of an accident are valid, and we do not know that they are, the

consequences of an accident or of future waste mismanagement could be disastrous and unlike anything we have experienced in conventional power generation. Those consequences make nuclear generation an extremely high risk power source.

2. And that benefits are high is an assumption. Many of our energy uses are only questionably beneficial; some are, in fact, seen as unquestionably detrimental. Many of our uses of energy may not only provide us with things we don't need and which may be harmful but also deprive us of those things we do need. Some people, for example, propose that a real need of man is terrain, territory, vistas, in short a natural environment akin to the one man has evolved in and that the organism can thrive in; many of our benefits make that harder to get. So, there are benefits and there are benefits, and we have to be sure we're talking about real benefits when we talk about taking serious risks to get them.
- C. The argument that we need nuclear power to support our economy is philosophically unsound and could be dangerous.

The basis of any economic system is the care and preservation of the species. When an economy becomes so divorced from itself that in order to survive it embarks on a programme which could seriously harm the genetic pool of the species, it should call itself into question.

III. Reliance on nuclear power keeps us from really solving our energy problems.

- A. The immediate availability of nuclear power, in spite of its environmental dangers, will reinforce the illusion that energy is environmentally free. We have lost the notion of our dependence on and relationship with other living things. If we are to solve our pollution problems, and if we are ever to have a sane energy policy, we must continue to take strides in regaining the realization of that relationship. In The Closing Circle, Barry Commoner proposes that the Fourth Law of Ecology is: There Is No Such Thing as a Free Lunch. If we ignore the uncertainties in nuclear generation and go fullspeed on with it, we support the illusion that there is a free lunch.
- B. And the more we depend on nuclear power, the slower will be our research into and our real consideration of alternatives. The nuclear programme takes time and money; some of that time and money should be spent experimenting with other, possibly safer, energy sources. And the more the nuclear energy is there, the less will we be motivated to experiment with other energy sources, the less will we be motivated to consider alternatives. When we settle on nuclear energy as an answer, ignoring the uncertainties, we close our minds and our pocketbooks to other possibilities.

Recommendations

1. That there be a moratorium on the development of the nuclear power programme until all of the uncertainties surrounding it are settled.
2. That a large percentage of funds and expertise involved in the programme be directed toward research into alternate methods of energy production.
3. That there be a detailed study of how much energy is used for what kinds of goods and services. Only then can we begin to talk about benefits and demands.
4. That government make a study of what can be sensibly and immediately done to alleviate the energy problem even while the above study is going on. Government supervision and perhaps subsidy of home insulation might be one outcome of such a study.
5. That the case be put honestly before the people with no selling of goods nor public relations flavour, with the real advantages and the real disadvantages balanced squarely on the ledger sheet.
6. That the energy and economy question be looked at candidly and undefensively with a more open view toward what environmentalists call the quality of life.

Mary Ann Shanahan
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cc Donald MacDonald
Darcy McKeough
Jack Riddell
Murray Gaunt

A CASE FOR ALTERNATIVES TO NUCLEAR POWER

"Of all the changes introduced by man into the household of nature, large scale nuclear fission is undoubtedly the most dangerous and profound. As a result, ionizing radiation has become the most serious agent of pollution of the environment, and the greatest threat to man's survival on Earth."

-Dr. E. F. Schumacher, in his Des Voeux Memorial Lecture, England, 1967.

Natural Background Ionizing Radiation

Low level radio-active materials are found in varying quantities in all natural environments. A very definite co-relation has been established between the incidence of such diseases as leukemia, cancer, etc., and the levels of natural radiation to which the inhabitants of an area are habitually exposed.(1) These studies establish that naturally occurring ionizing radiation, though unavoidable, is harmful.

Some Biological Effects of Exposure to Ionizing Radiation

Radio-active materials continually release small high speed alpha, beta, and gamma particles which penetrate any living tissue exposed to them, like bullets fired at any animal body. The damage depends on the components or cell structures they penetrate. Often the cell has the capacity to repair such damage, but frequently the effects are irreparable and the defective cell may die or reproduce to form more defective cells. These defective cells may escape the organism's growth mechanism, resulting in cancer. It is apparent that the effects of radiation damage may not be observed for a number of years.

Damage to the chromosomes (hereditary units in the reproductive organs) may result in defective off-spring. It should be stressed that all organisms, both plant and animal, wild and domestic, are susceptible to this type of injury.

Studies of human populations living adjacent to the first large American reactor at Shippingport, near Pittsburgh, which started operating in 1957, revealed a tenfold increase in infant mortality and a 31% rise in the incidence of various forms of cancer over the past fifteen years. (2)

Some radio-active isotopes, such as Iodine 129 and 131, Carbon 14, and others, are actually built into the organism's tissue upon entering its body, and are concentrated as these tissues pass through the natural or man-devised food chains. (3) Concentration results in increased exposure to radiation of the cells in the area of the concentrated isotope.

By-Products from a Nuclear Power Plant

A nuclear reactor produces vast amounts of heat as well as about one hundred tons of various types of radio-active isotopes a year. About 1% of these are released and over 99% are stored. (4)

a) Releases

During its operation, the reactor continually releases into the environment small (but none-the-less significant) quantities of radio-active products. These are released through ventilation stacks, cooling fluids, and other systems. (4)

It appears to be technically impractical, and certainly "uneconomic" to eliminate the escape of a very small fraction of the total radio-active output of the reactor. The policy has been to set up permissible levels of radio-active pollution. These are usually compared to natural background radiation, the implication being that what is natural therefore must be safe or harmless.

i) Permissible Levels of Exposure to Ionizing Irradiation

Various national and international authorities have set up what are termed maximum permissible levels of public exposure to ionizing radiation. Permission is granted by the authority - in Canada, the Atomic Energy Control Board - to the operator of the reactor to pollute up to the given level. The fact that these levels have been repeatedly reduced in the light of expanding knowledge concerning the injurious effects of these pollutants suggests that these levels are not so much based on scientific findings, but rather on an administrative decision to arrive at a balance between social risk and benefit.

Two quotations from cancer researchers concerning these levels are appropriate:

"While a great deal more is known than was known twenty years ago, it must be admitted that we still do not have most of the data required for informed judgement." (5)

"If a population were exposed to present maximum permissible levels of irradiation for thirty years, we would predict a 5% increase in all forms of cancer. In the United States after thirty years of such exposure there would be an additional 16,000 cases of leukemia and cancer each year, this assuming no increase in the population. Projecting present rates of population growth we would predict an additional 24,000 cases of cancer as the direct effects of increased irradiation." (6)

In arriving at these permissible levels of exposure, obviously no recognition can be given to variations in the susceptibility of the individual. Research shows that the damage from irradiation is proportional to the rate of cell division; the unborn fetus and the rapidly growing child will be the most susceptible victims of these arbitrary risks imposed upon us. (7)

Atomic Energy of Canada's claim that present releases of radio-active materials into the environment do not exceed one per cent of the permissible level, should be considered in conjunction with another prediction made by them that by the year 2000, the installed and operating nuclear generating capacity will have increased by a thousandfold over the 1970 capacity. (4) An even greater expansion is predicted in the United States. Considerable increases in the release of radio-active materials may also be expected in such fields as medicine, industry, research, etc., not to mention war, weapons' testing and the increasing probability of nuclear accidents.

ii) Tritium - One of the Radio-active Pollutants

Tritium is a radio-active isotope of hydrogen, with a half life of twelve years. It is briefly described here as an example of the new man-made odourless invisible poisons released into the environment in significant quantities by reactors both in their vented gases and coolants.

In the CANDU heavy water reactor, the output of this pollutant is expected to increase tenfold as the reactor matures. (4) Thus Tritium releases monitored at Pickering and publicised, are obviously misleading, despite the fact that officials admit that present releases of Tritium are "a little high" and the matter is "being given attention".

The Tritium molecule is so small that it will readily diffuse through solid barriers of aluminum metal and stainless steel. The problems of storing and containing this toxic and very soluble gas are not difficult to appreciate. (8)

"By the year 2000 the releases of Tritium and other isotopes may impose unacceptable radiation exposure to man and the environment." (9)

b) Solid Wastes

Each reactor must also dispose of over 100 cubic yards of radio-active garbage each year, such as contaminated paper, piping, failed components, and especially spent ion exchange columns (the devices that attempt to remove contamination from gases and fluids to be returned to the environment). This material is ultimately buried in disposal areas set aside for this purpose. (4)

The vast bulk of the radio-active materials produced by a reactor remains in the form of spent fuel. As it leaves the reactor, this spent fuel is highly radio-active and very hot. Some of the fission products it contains include Cesium 137, Strontium 90, Plutonium 239 which have 1/2-lives of 30.2, 28.9, and 24,400 years respectively. This means that the first two will take approximately 1000 years to decay to a point where they will no longer have to be isolated. The Plutonium 239 will take at least 800,000 years. After 300 years the spent fuel is still generating heat. (4)

The amounts of radio-active wastes further magnify the problem. As previously mentioned, AEC predicts by the year 2000, total nuclear generating capacity will be 1000 times that of 1970, and will have produced in excess of 100,000 tons of spent fuel.

"There is a basic philosophy which has been accepted as Canadian policy and on which most waste management practice is based. This is the policy of retrievability. In practice, this means that radioactive wastes will be stored in a facility for an extended period and when the facility reaches the end of its useful life, the wastes will be removed and placed in a new, similar, or improved facility. This operation can be repeated until the wastes have decayed to a negligible level, thus insuring that the wastes are always under control.

The term "disposal" often arises in connection with radioactive wastes and it implies that there is an acceptable method for non-retrievably getting rid of wastes. At present, however, we do not have sufficient long-term experience with any disposal method to justify its use and it has no place in the Canadian program."

-W.M. Campbell, The Management of Radioactive
By-products from a Nuclear Power Plant, AEC 1973, p4.

In other words, the wastes will have to be continually moved as storage facilities "wear out"; for at least 800,000 years. AEC does not consider permanent disposal acceptable but is leaving to future generations the burden of continual monitoring and transfer of deadly radio-active materials. Is this any more acceptable?

"...the spent fuel must be isolated for a very long time - about a million years for the radiation to reach that of natural uranium. This million-year period is a great deal longer than civilization has been in existence, so we cannot predict future conditions that far ahead. Thus, we can only build retrievability into our schemes to guarantee that future generations have at least one acceptable method of dealing with the radioactive wastes we are producing now."

-W.M. Campbell, as above.

Apparently AEC considers this to be an acceptable solution to the waste problem, but it is really an act of deferring responsibility and determining that acceptability by future generations will naturally

follow. A second fallacy is the assumption of stable social and geological conditions over the next one million years.

c) Thermal Pollution

While all electrical generating facilities produce large quantities of unusable waste heat, nuclear power plants produce from 50 to 60% more than fossil fuel powered stations of equal electrical output. (10) Only some 29% of the vast quantities of heat generated by the reactor can "economically" be converted into electrical energy. (11) The rest is released into nearby bodies of water in the form of warmed cooling water.

The Pickering nuclear power plant, with an output of 2160 million watts (assuming this output represents 25% of the total heat produced by its reactors) returns to the environment the equivalent of 2160×3 , or 6480 million watts of energy in the form of heat; mostly in the cooling water. Using the factor: watts x BTU's per hour (12), this quantity of wasted energy would be equivalent to over 22,000 BTU's per hour, or, sufficient heat to raise the temperature of over 14 1/2 million gallons of water from 60°F, to boiling point each hour.

With present serious energy shortages, the dumping of this vast amount of heat, to the obvious detriment of the environment, can only be described as a major defeat of modern technology.

If calculations such as these are super-imposed on projected expansion of nuclear power plants along both the U.S. and Canadian shores of the Great Lakes system, significant changes in the temperature of these lakes are inevitable. Add to this the probable increase in nutrients from various sources, and we may expect to see some profound changes in the ecology of the upper lakes.

FOOTNOTES:

1. J.W. Gofman and A.R. Tamplin, Low Dose Radiation - Chromosomes and Cancer, 1969.
2. London Free Press, April 12, 1973.
3. Proceedings of the International Symposium, Stockholm, 1966-7.
4. W.M. Campbell, Atomic Energy of Canada Limited, The Management of Radioactive By-products from Nuclear Power Plants, 1973.
5. B. MacMahon, Epidemiologic Aspects of Cancer, Cancer Journal for Clinicians, 1969.

6. J.W. Gofman and A.R. Tamplin, Radiation - The Invisible Casualties, 1971.
7. A.R. Tamplin, Fetal and Infant Mortality and the Environment, Bulletin of Atomic Scientists, 1969.
8. D.G. Jacobs, Sources of Tritium and Its Behaviour, U.S. Atomic Energy Commission, 1968.
9. K.E. Crowser, Engineering, Economic and Safety Evaluation, Oak Ridge National Laboratory, Pub. 4168, 1967.
10. Federal Water Pollution Control Administration, U.S. Department of Internal Affairs.
11. D.A. Keys, Atomic Energy of Canada Limited, Pub. AECL-2645, 1968.
12. R.C. Weast, Handbook of Physics and Chemistry.

THE ECONOMICS OF NUCLEAR POWER

Because of the very large, but obscured, investment of both Federal and Provincial government funds, comparison of costs between nuclear and fossil powered generating plants can be quite misleading. In arriving at true costs for nuclear generated electricity, the following points must be taken into consideration:

1. The much higher capital investment of a nuclear station has to be regarded as a total write-off at the end of thirty years, the estimated life of the reactor. Due to radio-active contamination, it is improbable that much of value will be economically re-cycled. Loss of land, and caretaking of abandoned nuclear power stations should be charged against their productive lives.
2. On-site generating costs constitute only a small fraction of the cost of electrical energy delivered to the consumer. Because of the policy of locating nuclear power stations at points remote from the areas of major consumption, transmission costs will be high. Power corridors connecting nuclear generating stations to the grid system and modifications of the grid to carry the extra load should be charged to nuclear power.
3. In the field of public liability insurance, operators of nuclear power stations enjoy a distinct advantage. Under legislation pending since four years ago because insurance companies are wary of it (1), combines of large insurance

companies would only accept liability claims to given limits. Presumably the government will accept the responsibility for claims beyond this figure. In the event of a major mishap, the bulk of compensation will come from public funds at no cost to the perpetrator.

4. In Canada, the operators of nuclear power stations find it uneconomic to use closed cooling systems, cooling towers, ponds, etc. Vast quantities of unwanted heat are simply dumped into nearby bodies of water. The economic advantages so gained are obviously at the expense of environmental quality. The long term economic consequences of thus-affecting environmental quality can not be estimated at this point in time.
5. The perpetual storage and management of ever-increasing quantities of radio-active wastes will constitute a major expense. Estimates suggest a charge of \$100 per gallon per year would be realistic (about \$20,000 per ton per year). It has been estimated that the United States pays eighty million dollars each year to store radio-active wastes; this figure can be expected to increase dramatically. (2)

FOOTNOTES:

1. J.F.D. MacIsaac, AEC, in an interview in the London Free Press, February 26, 1974.
2. W.G. Belter, U.S. Operational Experience in Radio-active Waste Management, 1964.

SOME CONSIDERATIONS

Do the benefits of nuclear power justify the risks? And whose responsibility is the decision?

A Common Sense Question

Referring to radiation, A.H. Booth of the Department of National Health and Welfare has said, "It is now generally agreed that there is no 'threshold' - no level so low that the possibility of producing an adverse health effect completely disappears. This being so, the question as to what level is safe is a matter of opinion only...It is a value judgement that even the man-in-the-street can just as well have an opinion about," (1)

Whether we should continue with or accelerate the nuclear power programme in Canada is correspondingly a question of values. It is not a question of scientific expertise, nor of economic expertise, nor of any expertise at all. It is a common sense question. Do the

benefits justify the risks? It is a question for an informed general public.

And because of the long term implications of nuclear power, it is a value question of more serious consequence than some others, one which, before we commit ourselves any further, especially deserves to be examined by society as a whole.

In fact, when Ontario Hydro advocates nuclear power it often claims moral impunity and states it is only responding to the public's demands.

The Question of Demand

But is the public demanding it? Or rather, have the cards been laid squarely on the table so that the public knows what it is choosing to get and what it is choosing to forego when it chooses nuclear power? The answers to these questions are crucial; we cannot claim that the public is demanding something when we have hindered responsible choice, or when we have prejudicially encouraged the demand, or when we have done both.

Responsible choice by an informed public has been hindered.

Information most readily available to the public, as presented in advertisements, in public relations films and folders, and in press releases, is misleading. It ignores those issues which are necessary for an informed choice. (2) To the general public, for example, nuclear power comes across as safe and clean, in fact as the "cleanest known method of thermal generation." (3) The problem of radio-active wastes, and that no other form of thermal generation leaves wastes as potentially dangerous and as demanding in vigilance, is ignored. Similarly ignored is the issue of alternate energy sources, underdeveloped largely because of inattention and inadequate funding. (4)

And, while more information is available, obtaining and using it is, in effect, discouraged. The tone of brochures, and films complete with music, lull the public into complacency. And, in spite of attempts at simplification, diagrams of atoms and terms like "rems" are defeating and obscure the real value issues involved. The intricacies of nuclear look like too much for the layman. And if it's clean anyway, why bother? What's left but to "leave it to the experts"?

At the same time that misleading information has discouraged responsible choice, it has encouraged the demand. If an energy source is widely broadcast as safe, and if it is relatively inconvenient and seen as unnecessary to obtain indepth information, why not continue to unquestioningly demand the energy? Why not go along with an acceleration of the demand, a doubling every ten years? If it's there and if it's clean, why not use it?

And, in spite of reference lately to using energy wisely, the very use of the term demand encourages the demand itself, or at least discourages critical evaluation of demand priorities. By calling current and predicted uses of electricity "demands", we are encouraged in seeing our need for electricity, not as something society is responsible for or has any measure of control over, but as something divorced from us, that is absolute and not relative to other considerations. We nourish an atmosphere that is afraid to look at whether the source is really safe and that is afraid to take the time to explore safer alternatives. And we are apt then, to allow actions to be taken to meet that demand which would seem preposterous to a more objective observer.

We are all participants in our culture and cooperate in the use and misuse of energy, but the public cannot be held responsible for nuclear power because the public has not been allowed to really examine and respond to the issues.

The Benefits Versus the Risks

Advocates of nuclear power claim that the benefits justify the risks, that the benefits are high, the risks low.

That the benefits are high deserves examination. We could perhaps talk more clearly about the benefits of nuclear power if we knew, in more detail than we do, how much electricity is used for which purposes. (5) Then we could sort out the benefits and decide which benefits warranted which kinds of risks. As of now, however, too many undifferentiated things come under the heading of benefits; under that heading fall, without distinction, such unequal things as heated homes and disposable TV dinner trays.

While some of the benefits are only questionably worth serious risks, others we might do better without in any case. People are philosophising in both conversation and scholarly journals, that many of our so-called benefits are actually detrimental, not only giving us things we don't need but destroying our chances of fulfilling our real needs. (6)

So, benefits is a vague term. Before we as a society take risks to get benefits we would do well to be sure that we hold those things we are getting as really beneficial.

Because in fact the risks of nuclear generation are not low. In investigating the risks, when one is not confused by contradictory arguments or by terms that are hard to remember, three facts stand out.

The first is that no amount of radiation, however small, can be described as not carrying some risk. (7) And arguments that radiation is in the natural environment and in brick houses and in X-rays, and that sulphur dioxide and lead are dangerous too, in no way alters that

fact that when we are talking about radiation for power, we are talking about using and handling and storing a substance that we know carries the risk of altering the cell nucleus of living things.

The second fact is that we have no way of rendering released radiation harmless. Unlike an oil spill, radio-activity cannot be neutralized. And it cannot be caught and stored again. If, for example, a storage tank leaks, the released radiation will continue to affect the environment and living things in it until it loses its radio-activity. Sometimes that's a matter of days or months; sometimes it's hundreds or thousands of years. (8)

The third fact is that one of the by-products of our nuclear power programme is Plutonium 239. Setting aside the problems of other by-products, and the chances of an accident, from whatever cause, the problems surrounding Plutonium 239 and its storage are significant by themselves. Plutonium 239, with its half life of 24,000 years, would take about 800,000 years to reach the radio-active level of natural uranium and is stored in facilities which are designed to last approximately 100 years. (9) Advocates of nuclear power say that the stored Plutonium is safe as long as it is managed. Management is crucial. But the management is charged to human beings, most of them presently unborn, who will have to change storage facilities every so often for nearly a million years. (10) All of this presumes a social and geological stability unknown in the history of man.

These storage problems and the consequences of and the consequences of any accident reveal nuclear power as a uniquely high risk energy source. Those issues alone make the risks so high that one is caused to reflect on what few benefits might justify them.

A Moral Issue

And this is where the issue clearly becomes a moral one. We are committing not only ourselves to the risks but future generations as well.

Is it fair to charge the responsibility of managing Plutonium 239, with innumerable changes in storage facilities, to persons yet unborn who had no say in the source of our electricity, no say in how much we should produce, and no say in its uses?

In terms of millions of years, the development of man on Earth is a relatively recent phenomenon. Are we really planning to bequeath to the future of man for nearly a million years, substances as potentially problematic as radio-active wastes?

Conclusion

As long as we rely on nuclear power as an energy answer, we will be reluctant to devote the attention and funds necessary to adequately develop alternate sources.

Isn't it sensible to stop the nuclear power programme now to get on with exploring alternatives to the sources, and, where appropriate, to the uses of our energy?

FOOTNOTES:

1. Radiation and Our Environment, Radiation Protection Division RPD-74, September 1969, p11, underlining added.
2. See Information Kit, Bruce Nuclear Power Development, Ontario Hydro, Atomic Energy of Canada Limited.
3. From an advertisement by Ontario Hydro which appeared in the London Free Press during the month of January, 1974.
4. See section in this paper on Alternatives.
5. Information is now available on how much energy is consumed in general areas, how much for industrial, how much for household uses, etc. What we need, however, is a more detailed study of how much energy is used for what kinds of industries, how much for which kinds of household uses. See Project to Set Energy Policy Guidelines - Annex, Dai Dong, P.O. Box 506, Bussum 1352, Netherlands.
6. See "Beyond Economics" by Gerald Royce, The Canadian Forum, February 1973, pp. 19-23.
7. Booth, p. 11. See also the section in this paper on Biological Effects.
8. For examples see Report of the Waste Management Committee of Atomic Energy of Canada Limited, 1972.
9. See section in this paper on waste storage. Also, "The Management of Radioactive By-products from a Nuclear Power Plant", by W.M. Campbell, Atomic Energy of Canada Limited, August 24, 1973, pp. 4 and 12.

The figure of 100 years as an engineering target was obtained from consultation with officials at the Bruce Nuclear Power Development on Wednesday, November 28, 1973.

10. Of course someone might come up with a permanent container. But someone might not. In any case, we are presently expanding our nuclear power programme without a solution to the problem of storing long term radio-active wastes. And arguments that the Plutonium can be re-used are superfluous; it may be re-used but it will not be used up and the storage problems will persist. Also involved is transportation of the spent fuel rods, which contain Plutonium 239, whether for re-use or to a new storage sight.

Similarly pertinent here is that spent fuel rods will be moved from one storage area to another for reasons other than deteriorated facilities. For example, when the spent fuel bay is full, in say five to ten years, the spent fuel rods will be moved to other facilities to make room in the spent fuel bay for "fresher" spent fuel rods from the nuclear reactor. (This information was also obtained from officials at the Bruce Nuclear Power Development.)

ALTERNATIVES TO THE NUCLEAR PROGRAMME

"The crucial gap (other than safety) between nuclear and solar electricity is the multi-billion-dollar subsidies for nuclear fission.

-Dr. Hannes Alfvén, 1970 Nobel-prize-winner for Physics, Bulletin of the Atomic Scientists, May, 1972.

In the years prior to 1973, the headlong rush to keep pace with increasing energy demands was an elementary matter of pouring more fuel or more electricity into the multitude of existing industries, businesses, and home. Suddenly a crunch occurred. Hitherto reliable and "exhaustless" supplies of fossil fuels became critically short in supply.

The search for alternates has intensified. It has taken two basic directions. The foremost of these has been the spontaneous expansion of nuclear power developments. Throughout the Western world nation after nation has plunged forward on the premiss that nuclear power was the answer. Unlike Sweden, which in 1973, curtailed its nuclear plans in the light of "new" information (1), Canada remains among those countries probing economic answers to the energy question in terms of nuclear power.

The second search is played down and often be-littled. Yet, its ultimate results will be far more dramatic and conclusively more infinite in scope.

The alternatives in this lesser search receive little, if any, government support. Public funds have not been made available to assist the pioneers in the search for clean energy sources.

Such alternatives include: solar energy, wind energy, methane from organic wastes, hydrogen as a primary fuel, geothermal power, seathermal power, electronic power boosters, tidal power, and the biosphere concept.

Not only is their government support minimal, but politicians have refused to give serious consideration to the many feasibility studies which indicate the economic viability of such power systems.

Solar Energy

Solar energy as a source for man's power needs has generally been ridiculed. The Hansard for Queen's Park will verify the non-answers of Government Ministers when questioned in these matters (2). Yet, it is generally agreed that the Earth intercepts 173,000,000,000,000,000 watts of thermal power from the sun every twenty-four hours. This figure represents 100,000 times more than the entire world's present electrical power capacity (3). It has further been stated that the average daily amount of solar energy that falls on Lake Erie exceeds the total consumption figure for our neighbour, the United States, from all energy sources combined, during the same time period (3).

The astounding point to be made is that this energy is not only clean, but, in rather weighty economic terms, it is free.

A sampling of examples in which the application of solar energy as the key to the solution of energy problems would include the following items:

1. Heat Concentration - Sunlight in the form of solar heat is collected, used to boil water or some other liquid, which in turn is used in the conventional manner to produce electricity.

The Meinel Plan at the University of Arizona is the most technically advanced system in North America at this time. Solar farms are envisioned for the southwestern deserts that will collect heat, generate steam, and operate electrical turbines (4). By using solid state electronics, a Meinel associate, Dr. B.O. Seraphin, also of the University of Arizona, has developed "interference stacks" (as heat concentrators) which will not only reduce the ultimate size of such solar farm collectors, but also bring such proposals within the realm of the present economic criteria for developing such proposals (5).

2. Direct Conversion - A second proposal for using solar power is more versatile and would provide power where it is needed, thus eliminating costly and offensive power line systems. The Arthur D. Little Company, a research firm in Massachusetts has proposed space screens for the direct conversion of sunlight into electricity coupled with a laser projection system to beam power directly to the location of need; to the industrial hearts in the northeast of this continent. (4)

3. The Biosphere Concept - The sun can be used as a power source on an independent household basis. In some instances, the roof becomes a solar collector and supplies an individual home with energy needs. Coupled with a storage system, such independent systems are now in use in the United States. (6)

The Biosphere is an integrated approach. It combines a living area, a greenhouse, a solar heater, and a solar still. Proponents claim several power functions can be operated independently from any public utility at lower costs than conventional sources for heat, water, and waste disposal. (7)

Wind Energy

Systems to harness the wind have been operating on a small scale for many years. In the production of electricity, conventional windmill systems, producing power for independent household use have been available since 1938. Several firms presently offer such systems with capacities up to 12,000 watt, 115/230 volt A.C. limits. (8) Canadian scientists have recently developed radically new concepts for wind generating systems. It is hoped to bring this approach into operation in the Canadian Arctic. (9)

Methane Gas

There has been much discussion in Ontario in the last few months on the topic of producing methane gas from organic wastes. The Ontario Federation of Agriculture has been urging the Government of Ontario to take a serious look at the possibilities in this area. They would be well advised to direct their attention to the work of the Gobar Gas Research Station at Ajitmal, India, and the work of Ram Bux Singh over the last twenty years.

Heat Difference Conversion

The engineering firm of J. Hilbert Anderson, Pennsylvania, has proposed a system of heat difference conversion using the oceans as the power source. The system operates on the principle of heat differences between two water sources, such as the 45 degree difference in surface Gulf Stream temperatures compared to temperatures several thousand feet below the surface. 1973 engineering estimates placed the cost of such a floating power station at \$17,000,000 per 100 megawatts. It provides the additional benefit of using waste heat to desalinate water. (4)

The preceding sampling of alternatives is not intended to be exhaustive. The main purpose is to demonstrate that work is progressing. Each activity, however, shares the same financial problem; development depends entirely on funds for engineering schemes to bring existing proposals into reality. Unlike nuclear fusion (much discussed, but not yet invented), the second set of alternatives rest within the limits of man's present technical knowledge.

The successful development of such power projects will be difficult, however, and environmental problems with some of them would be unreasonable to deny. Yet, the problems seem slight when compared to the unique dangers and unknown implications of nuclear power.

Our search for energy need not be a desperate, unthinking plunge - all that is required is the decision of government agencies to provide the much-needed funds. (9)

FOOTNOTES:

1. Science Year, World Book Science Annual 1974, in an article on the Environment by Sheldon Novick, p. 297.
2. Fred Birr, MPP, a critic of the Government has asked for action on these matters on numerous occasions and generally receives "one word" negative answers.
3. Wilson Clark, The Options are Abundant, in the Case for a Nuclear Moratorium, Environmental Action Foundation, U.S.A., Dec. 1972.
4. C.P. Gilmore, Plentiful Energy from the Sun, as published in Popular Science, December 1972. The article contains a useful summary of progress in developing energy alternatives.
5. Dr. Aden Meinel, University of Arizona, speaking to a Congressional Committee, Spring 1972.
6. Science Year, see page 58.
7. Day Charoudi, as proposed for Zomeworks, Box 712, Albuquerque, NM 87103, April 1973. A complete outline of the Bioshpere concept is available from this company.
8. See materials and information kit from Solar Wind Company, Alternative Energy Systems and Components, Box 7, East Holden, Maine.
9. Several useful articles outlining alternative energy systems are included in the booklet referred to in Footnote 3. Materials are available from E.A.F., Suite 731, 1346 Connecticut Ave., Washington D.C. 20036.

RECOMMENDATIONS

Based on the findings outlined in this position paper, CANTDU urges commitment and support for the following recommendations:

1. That there be declared an immediate moratorium on the development of the nuclear power programme until all of the uncertainties surrounding it are clarified and settled.
2. That a large percentage of funds and expertise presently involved in the nuclear programme be re-directed toward research into alternate methods of energy production.
3. That the Government initiate a detailed study of energy use to enable an objective study of benefits and demands.
4. That the Government determine procedures to alleviate the energy problem in a rational manner by initiating activities in conservation of energy as opposed to more energy production. Such measures might include home insulation standards and programmes for upgrading.
5. That the case for nuclear power be placed before the people in an honest and unprejudicial manner, eliminating the "selling of goods" or "public relations" flavour, with the real advantages and the real disadvantages balanced squarely on the ledger sheet.

This section presents copies of some of the press coverage in the Bruce Nuclear Power Development area. The clippings are arranged in chronological order and include notices of the public meetings and controlled development zone, and reports on the public meetings, and one meeting arranged by a consulting firm doing a community impact study.

Bruce County population increasing

Bruce County population saw an increase of 298 over last year, bringing the total to 43,287. The growth was concentrated in the south of the county. Bruce Peninsula lost 177 in the year.

The main spur to growth has been Ontario Hydro's construction at Douglas Point. Communities nearest this development have shown the greatest increase.

The biggest increase has been at Port Elgin. This town for the first time passed Kincardine in population, and now sits in second spot behind the county town of Walkerton. Predictions are that Port Elgin will be the largest community in Bruce in less than 10 years.

Port Elgin gained 297 during the year for a 3,570 total. Kincardine's gain was 38 to 3,287. Walkerton reversed a declining figure of the past two years and went up 119 to 4,461. Chesley grew by 44 to 1,744, and Southampton by 24 to 1,986.

Kincardine and Port Elgin brought the construction site.

Much of the Kincardine growth has been just outside the town. Kincardine Township gained 320 persons and Huron Township went up 41.

Villages close to the Douglas Point are also experiencing growth. Tiverton went up 62 persons to 662, Paisley gained 44 to 892, Ripley went up 43 to 406 and Tara gained two for a total of 659.

Mildmay shows no population change at 1,009. Teeswater dropped 39 to 969 while Lucknow went down 35 to 1,024.

The increases are reflected in a tight housing situation throughout much of Bruce County. Housing construction will brighten the picture, particularly in Port Elgin and Southampton and some easing is anticipated at Kincardine and Walkerton, if plans go through.

PORT ELGIN TIMES
JANUARY 3/74

Viewpoint

H. E. S.

Problems of rapid growth must be shared

With the announcement of Ontario Hydro's plans to increase the facilities of Bruce Nuclear Development, it becomes abundantly clear that area towns are in for difficult times ahead.

Bearing the brunt of obviously apparent growing pains will be the towns of Kincardine and Port Elgin. While the "Bruce" is being projected into one of the largest producers of heavy water in the world, when all phases are completed, this town will be subjected to critical decisions on how to cope with the increasing demand for provision of services and related commodities to keep pace with pyramidal events bound to result.

We do not envy the tasks that lie ahead for Town Council. Their's will be a most trying period indeed, and all citizens must place their fullest confidence in these men as they embark on an era of almost insurmountable administrative duties.

We are indeed grateful to Hydro for their recognition of current municipal plights in the financial department, with the announced grant to this town of \$250,000. It's like being caught in a trap however. How do you express thanks, yet knowing the amount of money allocated initially is quite insufficient to withstand the pressures that are looming on the horizon?

It is sincerely hoped this quarter-of-a-million dollars will only be the first of such financial assistance forthcoming from Hydro or government sources.

We must be realistic! Therefore both Hydro and Government must accept the fact that sole cause for our current dilemma is the direct offspring of Hydro's need for more power, more heavy water, resulting in the necessity of having to build billion dollar complexes to succeed in their technological search for success.

The announcement of the \$550 million expansion, together with current construction, compounds the problems of the area in how to provide and meet the inevitable pressures that will be placed on every vital service of the community.

Inescapably, this forecasted record population brings many problems. Already our local council has intimated the necessity of borrowing \$2.5 million dollars in the next five years to even keep abreast with expected 'crunches' on our economy.

The impact the development has brought about strains most of our future resources to expand in other directions - such as acquiring new industry, an almost forgotten entity of municipal development. Lack of adequate financing will reflect on the keeping abreast provisions for up-grading and advancing our tourist trade, once our leading source of revenue, but, as we see it, slowly slipping into the forgotten past.

We are appreciative of the benefits derived from the Douglas Point and Bruce Development projects. We are pleased to have had the site chosen so close to our town. It HAS helped our economy and placed Port Elgin into an enviable position among top-ranking municipalities.

However, we have reached the stage where Port Elgin can no longer cope with the irrevocable explosion in growth the "Bruce" has placed at our doorstep. It is irrefutable that Hydro alone must accept responsibility of providing as much financial assistance as needed to keep Port Elgin under economical control, saving our taxpayers from a burden they might be unable to withstand.

Hydro's investment in Canada, and this area, is commendable, but it must include the welfare of the communities affected, in all its future budgeting plans.

Huron study results to tell if Hydro to contribute more

Free Press Huron Bureau

DOUGLAS POINT — An Ontario Hydro official said Friday more grants would be given to Bruce County municipalities if a study on the social and economic impact of the Bruce nuclear power development on the area indicates extra monies are warranted.

Don White, Hydro community relations officer, said the study, expected to be completed by mid-summer, is being carried out by the consulting firm of M. M. Dillon Ltd. which has offices in London and Toronto.

Mr. White said Hydro granted \$1 million to the municipalities as a result of an impact study in 1971.

Additional grants totalling \$575,000 were announced Jan. 17 by provincial Energy Minister Darcy McKeough when he revealed plans for massive expansion of the heavy water facility.

However, the municipalities have said the grants will not cover the expenses incurred as a result of the expansion.

Port Elgin Mayor R. E. Iving and Kincardine Mayor John Askin estimate their communities will need about \$1 million each from Hydro.

The towns will get \$250,000 each of the \$575,000 in grants announced last month. The village of Tiverton is to get \$75,000.

Mr. White said the grants are an interim step. "It is recognition of our sincerity and until the impact study and analysis is made, we cannot really determine what compensation is warranted."

The \$1 million granted to the area municipalities as a result of the 1971 study is being distributed in 10 annual allotments of \$100,000 each.

In 1973, the Bruce County board of education received \$18,891 of the \$100,000 allotment for public school purposes and \$17,015 for secondary and retarded children's schools. The Bruce-Grey County Roman Catholic separate school board got \$2,694.

Bruce County received \$18,700. The remainder of the \$100,000 was divided among 23 towns, villages and townships. The largest amount, \$14,129.43, went to Port Elgin; the smallest to the village of Teeswater, \$42.70.

"I guess the grants were spread fairly thin," Mr. White said. "At least that is what the municipalities are saying."

"We thought at the time it was significant contribution. Today it is not necessarily the same," he said.

The province's nuclear development program, including the expansion at Bruce, is expected to produce 60 per cent of Ontario's energy by 1990. It now produces 18 per cent.

About 3,500 persons are expected to be employed at the plant this year. That figure is expected to rise to 87,600 by 1976.

"Our payroll of \$900,000 a week is going into these communities," Mr. White said. "I'm not saying it's all spent there, but a lot of it is."

Public meeting dates to discuss the expansion will be announced in March. In the meantime, Mr. White said his staff would meet with any area group interested in getting more information about the nuclear development.

editorial

Hydro sets an example

As far as most of the world is concerned, Canadians are nothing but "hewers of wood" living off the fat of the land.

And maybe they are right. What was the last major technical development produced in this country that was adapted by the rest of the world?

Canada is really nothing but a nation of pipelines, transporting oil, coal, grain, newsprint and other natural resources to the rest of the industrialized world. Then we buy them back in the form of manufactured goods at a much higher price.

Even Canadians think we can do nothing that might be the least bit original. If a television program, a movie, or book is produced in the United States it is automatically better than anything that can be produced in this country.

That's why it is nice to see Ontario Hydro break the old image.

Ontario Hydro has stuck with the Candu reactor to produce electric power in this province despite the sneers of the pundits over the last decade. Douglas Point and Pickering are proof that the system works.

The Candu system fares well when compared to other systems. It is much

safer than the complex American designs and it has the British design beat in that the Candu system works.

As a result, Canada has a good chance of selling the Candu system to Britain. Ontario Energy Minister Darcy McKeough and Canadian Energy Minister Donald MacDonald were in Britain last week to discuss the possibility of Britain using the Candu system. Although it is doubtful any decision can be made until after the British election, a sale to Britain is a real possibility.

If the deal goes through, it will mean the sale of a good deal of technology, uranium, equipment and heavy water to Britain. Once accepted there, it would be accepted much more readily in other parts of the world.

Hydro took a big gamble in sticking with Candu and now it looks like Canada will cash in on a real trading opportunity.

It should show the people of the world that we are more than "hewers of wood". It should show Canadians that they can do more than just sell natural resources. If Canadians don't learn, we will be a nation of hewers - with no wood to hew.



Bruce Nuclear Power Development

NOTICE OF PUBLIC MEETINGS

**To discuss Ontario Hydro's Proposed
Expansion Plans**

for the Bruce Nuclear Power Development
*The public is invited to attend meetings
on either of the following dates:*

WEDNESDAY, MARCH 13, 1974 - 8 p.m.

Port Elgin Saugeen Central School - Auditorium

Catherine Street

Port Elgin, Ontario

THURSDAY, MARCH 14, 1974 - 8 p.m.

Kincardine Town Hall Auditorium

Queen Street

Kincardine, Ontario

Copies of the complete preliminary proposals for Bruce Generating Station B and Bruce Heavy Water Plants B, C and D including environmental assessments have been placed in the following locations:

- Libraries in Kincardine, Port Elgin and Bruce County
- Municipal offices in Kincardine, Port Elgin, Tiverton, Southampton, Kincardine Township, Bruce Township and Saugeen Township
- Bruce County Planning Office - Walkerton
- Ontario Hydro Area Office - Walkerton
- Port Elgin Hydro Electric Commission Office
- Kincardine Public Utilities Commission Office

Synopses of the preliminary proposals are also available by writing or calling the
Information Office

Bruce Nuclear Power Development

P.O. Box 1000

Tiverton, Ontario 519-368-7031 Ext. 307 or 308

**THE OWEN SOUND SUN TIMES LTD.
MARCH 5/74**

Hydro to contribute to Bruce road repair

Ontario Hydro has offered to pick up half the estimated \$2,477,000 tab to reconstruct about 19 miles of roads in Bruce County, providing the ministry of transportation and communications will put up the rest.

The roads affected would be from Highway 9 north to Narva and Sideroad 15 of Greenock Township. County Road 15 from Narva west to Highway 21.

The roads provide a direct link from Highway 4 north of Teeswater to Hydro's construction site at Douglas Point. They have deteriorated badly from movement of heavy construction equipment and loads over their surfaces.

Hydro would like the roads reconstructed within the next two years.

On completion of Sideroad 15, the county will be asked by Greenock Township to assume this road into the county system. It formerly was a county road. The Bruce highways committee indicated it considers the road a logical addition to the county road system.

Hydro also has agreed to pay

half the costs of reconstructing Albert Street in Tiverton to a \$75,000 maximum. This street is used as a 2.5 mile shortcut to Douglas Point for northbound traffic on Highway 21. It too has deteriorated.

The Bruce committee did not concur with a request from Chesley council that an overhead flashing light be installed at the junction of County Roads 10 and 10B.

The committee felt that a fatal accident near the corner last October could have resulted from reduced visibility due to parked vehicles. The committee will recommend that parking along county roads be controlled.

The request by Eastnor Township that the county assume Sideroad 25 for 2½ miles west from Ferndale will be considered later this year when the entire county road system is reviewed.

A new policy for payment of lands required when a county road is widened will be presented to county council for approval. It would pay market value for the land, pay for trees at a negotiated price and give a maximum fence allowance of \$4 a rod.

The committee will ask the county to allot \$750,000 for highway purposes for this year. This is a \$75,000 increase over 1973 figures. Rising costs of labor, materials, bank interest, and fuel are cited as reasons for the increase.

A provincial subsidy of \$888,000 is anticipated. The highways accounts start the year with a \$19,000 surplus.

The committee has earmarked \$537,000 for construction.

The largest item is the \$135,000 reconstruction of 3.5 miles of Road 15 from Narva east to Pinkerton.

Other projects Road 1, from Lucknow north for 1½ miles, \$65,000; railway overpass at Chesley, \$70,000; Road 13 between Oliphant and Wiarton, \$60,000 bridge and approaches at Deer Creek on Road 19, \$50,000; Road 9 near Barrow Bay, \$38,000 diversion.

Maintenance will require \$683,000; machinery and garages, \$94,000; land purchases, \$25,000 and overhead, \$120,000.

Total proposed budget for the year is \$1,657,000

KINCARDINE NEWS
MARCH 6/74

Township of Bruce

E.N. Tennyson, Clerk-Treasurer

WHEREAS the Ontario Ministry of Housing has formulated special policies and requested that they be included in and form a part of a Bruce Township Official Plan. Such restricted area policy would place those lands outlined in heavy black lines on the map displayed herewith, into a restricted development area whereby lands within this area would be subjected to restrictions regarding permitted uses and development policies, over and above those planned in the remainder of the Township.

Therefore an information meeting for all interested parties will be held at

THE BRUCE TOWNSHIP HALL, UNDERWOOD, Ontario
MARCH 16, 1974 - 10 A.M.

at which time, Officials of the Ministry of Housing, Ontario Hydro, and Planning, will be in attendance.

The following Policies and Provisions relative to the Restricted Area Policy are hereby presented for your consideration.

RESTRICTED AREA POLICY

The area outlined in Heavy Black on schedule 'A' surrounds the Bruce Nuclear Power Development and is generally within five miles of heavy water production facilities which contain toxic hydrogen sulphide gas. Although most of this area is designated for agricultural use by the official plan it is considered prudent, from the viewpoint of public safety, to specifically restrict development in this area to maintain a very low density population. Thus, this area will be subject to the policies and provisions which follow, notwithstanding any other provisions contained in this plan to the contrary.

POLICIES AND PROVISIONS

The following types of development and/or new use will not be permitted in this area:

1. Institutional uses such as schools, hospitals, nursing homes;
2. Commercial uses providing overnight public accommodation including motels, hotels and new seasonal trailer parks and camping establishments;
3. Commercial uses which might attract large crowds and particularly those of an open air nature (for example, drive in theatres and race tracks);
4. New permanent residential development, including mobile homes, with the exception of the following:
 - a) residences associated with farming operations
 - b) a residence for a farmer's son or daughter who is actively engaged in farming on adjacent lands
 - c) a residence for a retiring farmer who wishes to retain a lot on his farm for his own personal use
 - d) the severance of farm houses which have become redundant as a result of a farm consolidation
 - e) minor infilling between residences existing at the date of the adoption of this plan in the hamlet of Inverhuron (no further subdivisions in this hamlet will, however, be permitted)

5. New seasonal residential development with the exception of limited development along the shoreline in the area designated "Resort". Such limited development will be restricted to small plans of subdivision or severances that have the effect of permitting only two tiers of cottages along the shoreline or the equivalent number of cottages in the form of cluster development.

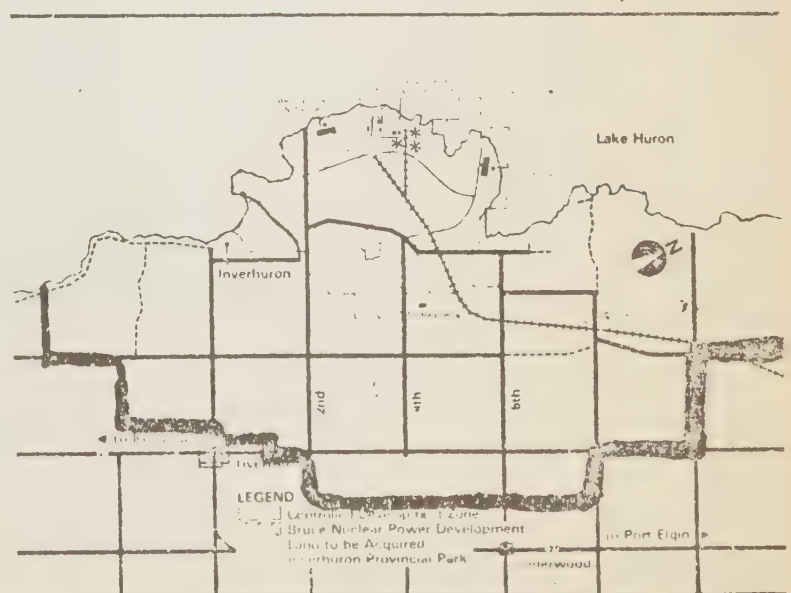
At the time an application for a building permit for any residence or normally occupied building is made, the applicant should be provided with information on the emergency plan for the area similar to that provided to residents and his attention should be drawn to the importance of minimizing air leakage into the structure.

Industrial uses of an open nature with the exception of gravel pits and quarries will not be permitted. Any other permitted industrial establishments in this area may be required to establish emergency plans consistent with the nature of its operation (number of employees, indoors vs. outdoors, etcetera).

Large lot requirements for agricultural uses in this area will be established in the implementing zoning by-law. Such lot sizes will be in the order of 100 acres in order to restrict development as much as possible to a density of some 20 to 30 persons per square mile.

Any proposal which would be in conflict with the above policies will require an amendment to this plan but will be discouraged. Should a proposal be made, the Township Planning Board and Council will consult with Ontario Hydro and the Atomic Energy Control Board of Canada prior to submitting such an amendment for approval under the provisions of Section 17 of The Planning Act, R.S.O. 1970.

E.N. Tennyson,
Clerk,
Township of Bruce



Bruce Nuclear Power Development

McKeough denies power corridor route review

TORONTO (Staff) — Ontario Energy Minister Darcy McKeough rejected opposition appeals Thursday for a review of the 50-mile power line route from Bradley Junction in Bruce County to Seaforth.

The route was picked in 1969 and the power line must be in operation for the opening of the first unit of the Bruce nuclear power station in July, 1975, the minister told the legislature.

An environmental review board to field objections on transmission corridors was promised in Tuesday's throne speech, but Mr. McKeough said it would be unrealistic to expect routes to be reviewed retroactively.

"The world can't stop," the energy minister said. "We can't turn the clock back three and four and five years."

But the minister was more conciliatory regarding the route now proposed by Ontario Hydro to carry power from the Bruce nuclear power complex to Georgetown.

Mr. McKeough said Hydro's program of public hearings on route selections "is unprecedented in North America" and through the process will report its conclusions to the government.

"At that point we will decide whether it is necessary to have some future environmental hearing," he said. "Obviously, if there is an environmental hearing board fully empowered at that point, that would presumably be the route we would go."

LONDON FREE PRESS
MARCH 8/74

Hydro public meeting

Corridor overshadows *plant*

PORT ELGIN -- Ontario Hydro officials met with the public here Wednesday night to explain expansion plans for the Bruce Nuclear Power Development (BNPD) at Douglas Point.

But many of the 175 people in attendance had another topic on their mind -- the proposed power line corridor.

Few questions related to the objective of the meeting but rather resulted in criticism by rural residents of the power line course.

One resident of the Listowel area described the answers given by Hydro authorities as "ridiculous and irresponsible".

Many of the questioners were people from the Listowel and Wingham area who live on the route the Hydro corridor will take.

Opinion and discussion had been invited by Hydro officials on expansion plans for the Bruce Generating Station and the heavy water plants.

Sam Horton, Ontario Hydro projects manager, said construction of four nuclear reactors and six heavy water units are planned.

Mr. Horton told the meeting that provision is being made by the ministry of health to provide assistance in establishing temporary outpatient quarters at the Saugeen Memorial Hospital. This will ease some of the increased patient load caused by BNPD.

Some Port Elgin and district residents rallied to the support of Ontario Hydro, thankful that the BNPD had been located in the area that had been classified, in the 1950s, as a depressed area.

The Listowel area man suggested the meetings being held by Ontario Hydro are only intended to pacify the people and let them "blow off steam".

His final remark was complimentary.

"One thing the meeting has done is to unite the farmers -- we thank you for that", he said.

Local reaction from the series of meetings will be submitted to the provincial government with a request for final approval for the expansion.

A similar meeting is to be held in Kincardine tonight.

THE OWEN SOUND SUN-TIMES
MARCH 14/74

Official council meets

Port Elgin has been suffering growing pains for the past few years. These, as a result of a tremendous growth due to the influx of workers at the Bruce Nuclear Power Plant.

As a result of the strain placed upon the town's facilities, an impact-study has been undertaken for the Ontario Hydro by M.M.Dillon, planners and engineers of Toronto.

Thursday night, members of town council met with John Farrow, manager of urban and regional planning division of the company. This is just the first of several meetings which will be held by the company, Hydro and town officials. The study is going to be used as a basis for allocation of funds, and is expected to be ready by June 1.

The planner was told of the strain on the facilities which have resulted in a real problem for the area.

The fact is, that the town must spend an additional \$500,000. on its water system to make it meet present demands. This is for filtration required by the government.

Bill Coulter, Clerk of Port Elgin, outlined for Mr. Farrow three areas of concern to the town: they are - financial, tax rate and a social status of the town. Also, further planning measures are needed as the growth continues.

The influx of families to the area has made it hard for local people to obtain and keep employees, pay being the major issue.

Up until the present, the town has been a "pretty homogeneous unit." Townspeople supplemented their salaries and incomes (which are lower than in the southern areas of the province) by catering to tourists. Secondary industries are scarce because the location is too remote, and this has also a damaging effect on the assessment base.

Now, cottage facilities are rented on a year-round basis and this affects the assessment, the Clerk said.

However, the people living in the winterized cottages demand the same services as those who are living in higher assessed homes, stated Mr. Coulter.

An affluent society also make more garbage, it was noted. The Councillors stressed that their present landfill site had been projected for use for 15 years, but was now in danger of being filled in about a year and a half.

"We are faced with having to find a new site," said Councillor John Wing, one of three who attended the two-hour session. It costs about \$10,000. a year to look after the dump, the Clerk informed.

Mr. Coulter noted that the assessment in 1967 was 73 residential and 27 commercial. Last year the figures were 82 residential and 18 commercial and industrial.

A time-consuming official plan in co-operation with Saugeen District Planning Board was out of date before its '73 comple-

tion, the group was told.

Port also faces an addition to the Police Force, and a possible full-time Fire Chief.

Municipal offices are entirely inadequate, recreation facilities, (which are excellent) are already taxed to the full, said Mr. Coulter. An assistant for Mr. Coulter is also an imminent need.

The town has just purchased a 600-gallon fire truck at a cost of \$38,865. This will replace a 37-year old model which has served Port Elgin and Saugeen Twp.

Storm sewers are an absolute 'must', Mr. Coulter explained that land in the area is light, and does not readily absorb water runoff. There have been some problems with flooding in low lying areas of the town limits. The sewers should alleviate some road problems.

The Port Elgin-Saugeen Central School, built in 1968 now has six portable classrooms and has doubled its size. Further, Port Elgin now has a separate school which had to add a portable to its eight-room structure.

Senior Citizens housing is also a direct outcome of growth and high land prices. Many older people simply couldn't keep up the expense, it was explained.

"Everyone expects and knows that in many ways, Hydro has been a good corporate citizen," said Mr. Coulter.

He noted that growth isn't always the worst thing that can happen to a town. However, some

one has to pay for the things that are necessary.

Councillors felt that the rapid growth had in some ways affected tourism.

The hospital situation, both in South and Owen Sound is "tighter than a drum," Reeve Harry Lane reminded.

"If the present Saugeen hospital facilities doubled, it would just be sufficient," Mr. Lane added.

Answering a question by Mr. Farrow, Mr. Coulter stated that the town has at present 26.3 acres per capita of open space, (including beach area, library and parks, etc.)

Traffic at shift changes is also a problem, Mr. Farrow was told.

Unionization is also a new thing in the area, resulting from the nuclear plant. This information greatly interested Mr. Farrow.

"If Hydro raises a finger then workers just go," said Reeve Lane, stating that while he felt store sales had increased there was no evidence that profits were higher.

Sam Horton of Ontario Hydro informed that Hydro had been holding off sending the cheques, needing assurance that the tax stabilization fund would not be affected.

He said Hydro felt that local officials should do their own planning.

The Township of Kincardine is concerned about its road subsidies. This area has increased in population but grants are constant, the meeting was told.

Tiverton would like an official plan, but planning costs money, and we haven't got it, an official explained. The population in this village has tripled in the past 10 years.

Mr. White suggested that there might be a small residue in a special fund for assistance to municipalities. He promised to look into the matter, and check back.

The matter of sewage is also one of concern in Tiverton, the meeting was told that letters sent regarding this matter hadn't even been answered yet.

Contact should be made with the new Minister of the Environment, Bill Newman, Mr. White suggested.

Municipal representatives received a thick report to study. Several persons contacted following the luncheon meeting would like to have had a chance to study this prior to the Monday session. Reeve Alex Lamont of Saugeen Township was concerned that in the report it was suggested that "growth and development in Saugeen had been haphazard."

"We could have defended ourselves, if we'd seen the report," he noted to Mr. White.

The Minister said that to his knowledge, the information in the report of the situation in Bruce was correct.

Reeve Harry Lane of Port Elgin questioned the Minister on the feasibility of urban and rural localities becoming one.

"Local prosperous counties could be a strong force together," Mr. White said, noting that Haldimand and Norfolk had undertaken such a plan some years ago and there was no "antipathy." The starting point is the attitudes which prevail, he stated.

Some present reminded, "we asked for it (the hydro plant and development) and it hasn't been all bad."

Port Elgin Councillor William Taves said that they (the representatives) would like a chance to study the report.

Reeve Lane, who has asked several times at recent meetings why the heavy water plant had to be located in the same area as the nuclear plant was answered on Monday.

Mr. Horton informed there had to be good water, reliable electricity and steam energy for such a plant and that it had to be in a community of relatively low population density.

He added that it also had to be on a site owned by Ontario Hydro.

This was the only site which met all requirements, Mr. Horton added.

Many present were sorry that the question period had to be curtailed, but agreed that such meetings had to be held, and were valuable.

THE BEACON NEWS
MARCH 14/74

Hydro public meeting drew few local questions

About 300 people attended the public meeting sponsored by Ontario Hydro in the town hall on Thursday, March 14, to discuss the impact of proposed expansion at the Bruce Nuclear Power Development on the surrounding communities.

Although few local residents questioned the panel of Hydro experts, several people from other areas asked about safety, pollution and the hydro corridors.

There was little actual discussion of the impact of the expansion on Kincardine. Bill Nagle, Kincardine, asked when the results of the impact study being conducted by M.M. Dillon, a consulting firm, would be released and if the report would speed up the legal processes that inevitably slow down building and expansion programs. Mr. Nagle specifically mentioned the need for expanded facilities at the Kincardine hospital and the time lag between applications being made and work actually beginning.

Sam Horton, BNPD project manager, said the report would be completed by early summer but by the time Hydro assessed the report and turned it over to the ministry it would be the end of the year at least before anything came of the report. He added that the report would not speed the usual processes at Queen's Park in any way.

"Hydro will present the urgency of the matters to the government to help speed up proceedings independent of the results of the Dillon report," Mr. Horton assured Mr. Nagle.

Burton Hodgins, chairman of the Bruce-Huron Hydro Corridor Negotiating Committee and other farmers stated

their concern over Hydro's plan to use good agricultural land for the corridor and accused Hydro of taking more land than is needed to carry out the power from the proposed generating stations. Bruce Nunn, an area farmer, pointed out that even if Hydro leases the land around the towers back to the farmers, this acreage would be out of production for at least four years at a time when the world needs all the food that can be produced. The land would be unused during a possible two-year construction period, he contended, and another two years while the soil was returned to productivity.

Mr. Hodgins also said the amount of money offered the farmers for their land is not in line with prices paid elsewhere in the province nor with the current rate of inflation in the area.

Cottage-owners at Inverhuron from Kitchener and Hamilton, also questioned the panel about the decrease in the market value of their land as a result of the restrictions imposed by the Atomic Energy Control Board in a five-mile radius of the heavy water plant. They wanted to know if Ontario Hydro planned to give allowances to cottage-owners who wanted to sell out but could not get a fair price in relation to the land prices outside the controlled area.

Sam Horton advised the cottage-owners that Ontario Hydro preferred not to buy cottages in Inverhuron because they were confident a realistic market would return in Inverhuron in time.

Several people expressed concern about the safety of the

radioactive waste storage methods, the damage to vegetation and people by the sulphur dioxide and hydrogen sulphide, the effect on the fish where heated water is being poured back into the lake and the possibility of nuclear explosions if there were a failure in the coolant system at the heavy water plant.

Ontario Hydro had done extensive studies on all the questions and the people were assured by panel members of

the safety of the operation of a nuclear generating station and a heavy water plant.

Rev. James Weir of the Kincardine Presbyterian Church suggested the churches might have valuable input for the Dillon report if there were a way to present the information to the consulting firm. Mr. Horton promised to arrange a meeting between the local ministers and the consulting firm.

Anyone who attended the meeting hoping to change Ontario Hydro's stands went away disappointed. Top executives and researchers from Atomic Energy of Canada Ltd., Atomic Energy Control Board and Ontario Hydro were present to explain Hydro's plans and policies regarding the expansion. The questions were recorded and will be included in a report to the minister of energy who will decide their effect on the program, if any.

Development controls in Bruce Twp. inevitable

At the information meeting in Underwood on Saturday, Mar. 16, John Longworth, a representative of the ministry of housing said if the proposed official plan incorporating the suggested controls was not adopted by the township, the provincial government would put a freeze on the township. The freeze would impose much more stringent controls than those currently proposed until an official plan of some sort is adopted.

John McKenzie, Bruce Township reeve, confirmed that he had been told by another government department that a freeze was the alternative to accepting the official plan.

The 100 people who attended the meeting did not react very favorably to this suggestion. Most of them were worried about the adverse effects of the controls on the market value of their property.

Mr. McKenzie, who acted as chairman, outlined the history of the present problem. Bruce Township had an official plan prepared and submitted last summer but it was never approved.

Last November 5, representatives from Ontario Hydro and the ministry of treasury, economics and intergovernmental affairs advised the township council that there would be land use restrictions within a five-mile radius of the heavy water plant because of the need to maintain a low-density population in case of a leak of the toxic hydrogen sulphide gas.

After this, the council met with the Atomic Energy Control Board which had imposed the restrictions and drafted the restrictive policies.

Mr. McKenzie pointed out that the restrictions were not as severe as had been expected. In the original plan, Inverhuron would have been zoned residential but now it will remain as it is. The other area affected will be Baie du Dore which will be zoned rural rather than residential as was planned.

Mr. Longworth of the plans administration branch, London regional office, ministry of housing, said he prefers to refer to the five-mile area as a controlled area because the permitted uses don't vary much from the original township plan.

The only development that will be allowed at Inverhuron is infilling and at Baie du Dore, lots 30 to 36 of the lake range and lot A, concession 6 will be limited to existing uses rather than being designated resort.

The development of resort areas will be restricted to small, two-tiered subdivisions. The rest of the area will be designated rural permitting agricultural operations and related dwellings on large acreages. Purchase of packages of less than 100 acres will be discouraged to prevent the use of agricultural land as residential land and to keep the population density down.

Some farm related commercial industries that are low users of water such as machinery and feed sale operations or sand and gravel pits will be allowed.

No public institutions or commercial operations that attract large crowds or provide overnight accommodation will be allowed.

These policies will be clarified, the terms defined and

more detailed maps prepared before the plan is finalized.

Sam Horton, BNPD project manager, said he can only explain the need for controls by stating that different people have different reactions to the same situation.

"Some individuals are ready to work at the plant and live nearby. The risks to nearby residents are very small, probably smaller than the risks involved in driving to and from work. But the Atomic Energy Control Board looks at the situation differently and wants to minimize the risk to the public. It's easier to handle an emergency with a low population density," said Mr. Horton.

Ontario Hydro is buying up the land in a two-mile radius east of the development where owners are willing to sell. But he said Ontario Hydro does not want to buy all the land in the 5-mile controlled area because this would not satisfy the needs of the entire community. Some people want to sell and some want to retain their homes and cottages.

Hydro's policy in Inverhuron is not defined although Mr. Horton said there is no intention, at the moment, of buying the cottages. Hydro has adopted a wait-and-see attitude believing that a real estate market will return to Inverhuron in time.

In response to repeated questions about allowances for land whose value decreased because of the controls, Mr. Horton advised landowners to make a claim to Hydro for compensation if they had documentary proof. When George Gathercole, the Hydro chairman, met with the municipal

officials he said specific claims for compensation would be considered.

Mr. Horton said not one actual claim for compensation has yet been submitted for consideration.

In response to a question as to whether Ontario Hydro requires building permits like everyone else, Reeve McKenzie said as far as he knew Hydro had only applied for one permit from the township and that was for a storage shed. There is a possibility that as a crown corporation, Hydro is exempt from building permits but the reeve said he intends to get a legal opinion on the question as soon as possible.

The general mood of the people at the hearing seemed to be one of dissatisfaction and the fear of being railroaded into an unfavorable situation by a powerful organization and the government. As the meeting ended the feeling seemed to be that the proposed official plan should be incorporated as soon as possible with amendments to be made as the need arises. Mr. Longworth said it would probably take a year for the plan to be drawn up and approved and that in the meantime interim controls would be imposed.

KINCARDINE NEWS
MARCH 20/74

editorial

Public participation?

The provincial government has approved in principle Ontario Hydro's expansion plans for the Bruce Nuclear Power Development. However, before final approval is given, the public is to have an opportunity to discuss the project and its effect on the area.

Three hundred people showed up at the town hall Thursday night for a public meeting called for this very purpose.

There were politicians and would be politicians in attendance from Windsor and Goderich. There were pressure groups such as Pollution Probe. There were concerned individuals from all corners of the province.

They had questions and more questions. Unfortunately most of them verged on the ridiculous and had nothing to do with the expansion at the Bruce.

As far as local input was concerned, there was next to none. There were no (to the best of our knowledge) federal or provincial politicians from Bruce at the meeting. Town council was in attendance

but said nothing. The same applies to the school board. No word was received from the Kincardine Hospital Board.

Hydro has met with local municipal officials who have expressed their wishes to Hydro. However, local boards and councils should have restated their views so that the public would have some idea as to what they are.

As far as the lack of response from local citizens is concerned, there could be a number of reasons. Many likely feel that the Bruce NPD expansion will be great for the area. It means jobs and a booming economy.

Others are no doubt quite cynical about the workings of Ontario Hydro and feel that the expansion will go ahead whether they object or not.

Whatever the case, Hydro officials are likely quite happy with the results of their well staged meeting. There were no interesting alternatives raised, no great questions asked, no real local objections to the expansion. Hydro should have no problem getting the project approved.

KINCARDINE NEWS

MARCH 20/74

LET'S BE FAIR

by Florence Stafford

The invitation to the Hydro meeting held at Port Elgin last Wednesday read "To discuss Ontario Hydro's proposed expansion plans for the Bruce Nuclear Power Development."

The meeting started at 8:00 p.m., coming to an unresolved adjournment at 11:30 p.m. In that interim there were no more than two or three very short comments as to the good Hydro is doing, interspersed with about thirty to forty briefs, prepared and some unprepared, deploring the spread of Hydro power. The word 'power' here is used in the sense of 'overpowering' - not 'kilowatt'.

Let's face it, where would we be without Hydro? Many of us had a taste of that possibility when the disastrous major break-down occurred in southern Ontario and New York on November 9th, 1965.

Certainly, the farmers who may be involved if the corridor runs through their property have a distinct right to question and comment and make sure they are compensated properly for any disruption to their rights, but it seems they are crying before they are hurt.

Yes, they have a right to say that certain lands will have to be relinquished that could be used for growing crops, but Hydro has proven the lines, from a

technical standpoint, cannot be underground. There is no alternative -- the power has to be transported.

The main thing is that Hydro must be fair in their dealings with the owners of land over which they must pass.

In turn, we must be fair in welcoming Hydro to our district and build upon the influx of people to our hitherto depressed area, in which we were crying for something to happen to take us out of the doldrums.

We were most impressed to see three young men sitting quietly listening to the pros and cons. We made it a point to ask their opinion of the meeting. Tom Kail, Mac Caloren, both students at the Saugeen District High School, and Mark Sanderson, a recent student had this to say - "we are mighty glad that Hydro are planning so far ahead, to make sure there will be power for years to come." These ecology and economy minded young people see no hazard to the community because they are willing to trust the highly trained experts of Hydro to know what they are doing, and to be fair.

Trust - and - fairness -- are two splendid attributes. We hope it can be shown on both sides.

THE PORT ELGIN TIMES
MARCH 21/74

200 Meet To Discuss Impact Of Bruce Nuclear Expansion

The impact of proposed expansion at the Bruce nuclear power development — socially, environmentally and philosophically—was the concern of more than 200 persons at a meeting at Port Elgin, Wednesday of last week, sponsored by Ontario Hydro.

The Bruce expansion, announced in January by Energy Minister Darcy McKeough, calls for building three more heavy water plants and a second nuclear power plant on the 2,300-acre site at Douglas Point. The expansion would be completed by 1990.

Sam Horton, project manager of the development, outlined three basic areas where problems could arise in expanding the nuclear facilities.

1) When the expansion construction peaks in 1978, there will be about 7,200 workers at the site, 4,000 more than now, imposing a strain on community services such as hospitals, schools and recreation facilities.

2) Hydro will be buying about 1,600 acres of land east of the Bruce development, in addition to the already purchased Inverhuron Park, to act as a buffer strip. Hydro would restrict development to an area of about 6,000 acres surrounding the buffer zone.

3) Increased commuter and heavy material traffic causing deterioration area roads.

Berton Hodgins, president of the Bruce-Huron Hydro Negotiating Committee, suggested a fourth area of conflict. He said proposed power corridors to carry electricity from the Bruce plant would affect many area farmers.

The meeting was called to get public opinion on a proposal to twin the 3.2-million-kilowatt nuclear generating station at Douglas Point and to increase the number of heavy water production units from two to eight.

But most of the 24 questions directed at the Ontario Hydro panel concerned the power corridors from the station.

The majority of the persons attending the meeting were property owners along the route of the power lines from the station to Scaforth and along the branch line from Wingham to Kitchener.

When the first question on the corridor was presented, Sam Horton, projects manager at Douglas Point, said the corridors are a separate problem from the plant construction and are being dealt with at other forums.

But the corridor questions continued.

Larry Smith, chairman of Sauguen Memorial Hospital board in Port Elgin, said his doctors are overworked now and that the outpatient department handled 1,300 more patients in 1973 than during the previous year.

"We can't keep this up," Mr. Smith said. "We've tried to get government increases for our outpatient department, but they are cutting down on expenses."

Mr. Horton, in another reply, said this impact would be considered in a separate study that Ontario Hydro has commissioned to be done by M. M. Dillon, Toronto.

"We will lend support to your plea for assistance from the government," Mr. Horton said. But he added that his report would not likely be available for a year.

Mr. Smith replied that his hospital facilities could not wait that long for expansion.

When a Hydro representative said the corporation has no programs to induce industry to the area, a member of the audience said the project has chased more business from the district than it has brought in.

High wages paid construction workers were blamed for closing of area plants.

George Hammond, manager of the Port Elgin Public Utilities Commission, hit back at farmers' criticism of proposed power corridors.

"If we don't allow these (Hydro) people to design for our power, maybe we should have them grow grain and raise beef, and then the farmers can plan the power distribution system."

In reply to a suggestion that the station should be built elsewhere, Mr. Hammond said that this area would then need corridors to bring the power here.

A woman who has a cottage about two miles north of the heavy water plant said a fine, black ash has been settling around the cottage since the heavy water plant has been in operation.

A Hydro official said her complaint about the ash was the first he received. However, a sample will be taken immediately for analysis.

A suggestion by Patrick Daunt of Wingham that the plant is being built so electric power can be exported to the United States, was vigorously denied by the Hydro panel.

When Ontario Hydro has a surplus of power, it is good business to sell it to the United States, Manitoba or Quebec. However, Ontario Hydro also imports power from these same links.

Views from Port Elgin

by Bob Farrell

The public meeting held by Ontario Hydro turned out to be somewhat of a waste of time for people who want to learn more of the impact of the Bruce Development on the Port Elgin - Southampton area. But don't blame Hydro. In fact, the organization deserves a great deal of credit for holding such meetings.

The meeting was dominated by farmers from 'down country' who aired their complaints concerning power corridors and transmission lines. Early in the questioning, Hydro officials made it clear this meeting was really held for people in the immediate area. This was not done to dismiss other questions but to try and generate questions of a local nature. When these failed to come, inquiries centered around whether or not additional generating facilities were required and the transmission of power. It was obvious that the panel had faced these questions before but they patiently tried to answer where they could. Unfortunately, it is rather difficult to answer questions that are of a "Do you still beat your wife?" nature. On many occasions people from the audience accused Hydro of not answering when, in reality, a reasonable response had been given.

The few local questions that were asked were handled as well as might be expected. Larry Smith's question concerning assistance for the hospital brought a reply that would indicate that it is almost certain there will be assistance but how much will

depend on the M. M. Dillon impact study presently being conducted. We spoke to Mr. Smith after the meeting and he indicated that Ontario Hydro has made a sincere effort to help the hospital through the immediate problems until such time as long range solutions can be found. For the time being, this would seem to be a fair enough proposition.

Some people indicated that the meeting would accomplish nothing and was really being held after the fact, as a public relations stunt. Maybe this is true; on the other hand, maybe Hydro is willing to listen to local concerns and act where it is possible. They have met with local governments and services and listened to the problems. They have pumped slightly over a million and a half dollars in grants into the area as an acknowledgement that the Bruce is causing problems on the local level. They have commissioned an impact study by a team of reputable consultants to assess as accurately as possible how the area has been affected. They have never denied their obligations to the local municipalities.

We left the meeting feeling that perhaps Ontario Hydro is not the cold, unfeeling corporation that many people believe it to be. There is definitely an awareness of the public concern. There appears to be a sincere effort to find solutions. Maybe it is all a huge public relations gimmick. The point is that it is too early to pass judgement. The jury is still out.

White promises aid to Bruce towns

By WIB SCHWICHTENBERG
Staff Reporter

KINCARDINE — Provincial Treasurer John White told municipal leaders from South Bruce Monday that the government will assist the area financially due to the growing influx of new residents working on the Bruce Nuclear Power Development at Douglas Point.

About 30 municipal officials from the area attended the meeting.

"There is no question that your problems are serious and that unless incisive preventive action is taken, the situation will grow far worse before it gets better," said Mr. White.

Construction at Douglas Point has already attracted more than 3,000 workers, many of them with families. The work force is expected to peak at more than 7,400 in 1977-78 and decline gradually until 1984 when it should level off at 1,970.

The treasurer told the leaders that his ministry has summarized two major problems.

First is a heavy demand for housing that cannot be met in a short term. secondly is heavy pressure on the financial and planning capabilities of local municipalities to provide service which residents need now or will need in the next five years.

The treasurer recommended that municipalities apply at once for assistance from the newly-formed housing action program operated by the ministry of housing.

Noting that Bruce County is considering a study of restructuring, Mr. White said if the study does not take place, consideration should be given to

amalgamating some municipalities in South Bruce.

"For our part, we will take every possible immediate measures to provide some of the extra money you need. We will ask the ministry of transportation and communications to review its road subsidies program in Bruce South to see what additional moneys might be available to you," the treasurer said.

Mr. White said his ministry will review its own grants program and make available every dollar possible that can be justified from that source.

He also said he will consider not lowering Kincardine and Port Elgin's property tax stabilization grants in view of contributions received from Ontario Hydro.

The treasurer hinted that this amount could be \$500,000 but the exact amount will not be known until after April 4.

The Bruce Nuclear Power Development (BNPD) site occupies approximately 2,300 acres of land and about four miles of shoreline.

At present the development comprises three main areas: Douglas Point generating station, Bruce Heavy Water Plant, and Bruce Generating Station.

Ontario Hydro proposes to construct an additional 3,000 megawatt station in the southwest corner and expand the heavy water plant by adding six units to the existing two units.

The proposed generating station is scheduled to be in service by July 1, 1981; the remaining units will follow at successive nine-month intervals to 1984.

Impressions by John Nesbitt

Voices from oblivion

They sat there in the council chambers on Thursday evening hopeless in their helplessness, and they tried to answer the bland questions they were being asked.

The man from M. M. Dillon Ltd. was there concerning the impact study that his company is doing for Ontario Hydro. The company was making the rounds of the local municipalities letting them have their say on the problems of growth, problems created by Ontario Hydro. This night it was Southampton's turn to flounder in the chamber of despair. The Mayor Sid Dunning could not even hear the man's voice half the time, Elli Kennedy was an hour ahead of the man in most issues, anticipating his questions as he led up to them.

Everything is so interrelated as far as growth is concerned. It is very difficult to pigeon-hole each issue such as housing, and zoning and recreation, but the questions that were asked seemed to be attempting this. But then I cannot say that the study was really attempting to get into the stream of municipal thought, anyway.

Apparently there would be more

statistical analysis done in the following days, but surely this performance by M. M. Dillon Ltd. was superficial to say the least.

In Southampton there are two areas of thought about growth. There are those that are opposed, and there are those in favour. Any attempt at analysing the effects of Hydro on the community has to consider these opposing views. The incredible first year university style questioning, never even scratched the surface of Southampton politics - and it needs to be scratched. What is Hydro attempting to do with its quaint little study? Why have one at all? Hydro probably has two sets of political books - one for the political boys in Queens Park, and one for the political boys within their own structure.

And where does that leave Southampton's elected body? Wheezing and gasping for existence was what I saw them doing on Thursday evening, trying to cover all things for all time - the last desperate chance. How long will it be until we cannot hear our local politician's voices, and how long will it be until we cannot hear our own?

THE PORT ELGIN TIMES
MARCH 28/74

Town against expansion until financing available

"Council as a whole agrees that unless we see some money, not just a promise of money, we are not interested in expansion in the town or servicing peripheral subdivisions because we will not put this burden on the taxpayers," said Mayor John Askin Monday night.

He made the statement at an information-gathering meeting called by the planning board which was attended by the town solicitor, Richard Rohmer, town planning consultant, W.E. Ogden, Bruce County South planning director, Malcolm Campbell, representatives of the town council, the industrial committee and the Public Utilities Commission.

Mr. Askin, and two councillors, Dave McKee and Earl Wrightson, had just returned from a meeting with Queen's Park officials. They reported that there was still no definite indication whether or not Queen's Park would provide money to help pay for expansion costs in Kincardine.

Mayor Askin also said that the council feels that at some point in time the pressure on the developer will be so great that he will consider shouldering all the servicing costs or the pressure will be so great on Ontario Hydro to provide housing for employees that some money will come from that source.

"We don't care who puts up the money," said the mayor. "But it won't be the town".

Other areas of concern discussed at the meeting were rezoning of industrial land to allow residential developments

and the density that will be permitted in new developments.

Ken Johnston and Dr. W.G. Bruce, of the industrial committee expressed reluctance to have any industrial land south of Kincardine Avenue rezoned residential. Their main argument was that at some time in the future, when Hydro's labour demands begin to fall off, there will be vacant housing in town that might induce industries into Kincardine. At such time, it would be preferable to have all the industrial area in one section of town rather than scattered piecemeal throughout the town.

Both planners present agreed that unless someone came up with very convincing arguments to the contrary, there is no need to rezone any industrial land south of Kincardine Avenue for residential purposes.

The developments proposed by Underwood McLelland Associates in the Russell St. area and that proposed by Taurum Investments north of Kincardine Avenue and west of the town's eastern boundary were considered sufficient by Mr. Ogden to meet housing demands in Kincardine.

Mr. Ogden suggested that steps should be taken to set density limits before subdivision agreements are entered into with developers if the town is not interested in having high density housing. He did point out that some townhouses and apartment buildings may be necessary to meet the needs of the people

coming in who may not be able to afford to invest in single family dwellings.

Hartley Watson, superintendent of the Public Utilities Commission gave a brief run-down on the hydro and water supply in town.

The new water treatment plant was built to handle a maximum population of 6,500. When the population reaches 5,500 plans will have to be made to increase the facilities.

He said there is water available for part of the development proposed by Taurum Investments and that the substation required to handle the Underwood-McLelland development would also handle Taurum's development.

At the moment, Mr. Watson said, transformers have been ordered to increase the capacity of the substation in the south end of town to handle the present load.

Mr. Watson concluded by stating that both the hydro and water departments of the PUC are in grim financial positions and would not be able to develop any areas unless some money was made available.

Although no concrete resolutions came out of the meeting, the air was cleared among the various bodies and their individual positions clarified.

11.0

LETTERS FROM ONTARIO MINISTRIES

Comments on the preliminary proposals have been received from the following Ontario Ministries:

Ministry of Labour

Ministry of Agriculture & Food

Ministry of Industry & Tourism

Ministry of Natural Resources

Copies of the first three letters of comment are attached. The comments of the Ministry of Natural Resources were preliminary and have been the subject of discussion at one meeting.



Ontario

Ministry of
Labour

April 17, 1974

Mr. D. M. Hayter
Project Study Co-ordinator
Bruce G.S. B
Generation Projects Division
Ontario Hydro
620 University Avenue
Toronto, Ontario
M5G 1X6

Dear Mr. Hayter:

Re: Proposed Expansion of Facilities at
Bruce Nuclear Power Development

I am sorry that there has been some delay in replying to Mr. Morison's letter of March 7 concerning the above development. We have checked the report in this Branch and have found only two points on which it seems appropriate for us to comment.

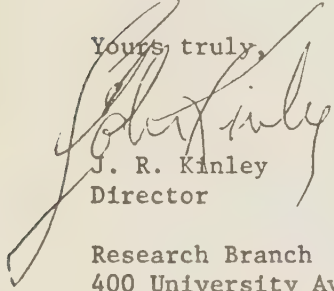
Unquestionably, you will be complying with all the appropriate provisions of the Industrial and Construction Safety Acts in the building and operation of this development. However, there is almost no mention of worker safety in the report and you might wish to put in a sentence or two that demonstrates your concern about this matter. In contrast the reports do deal with the question of public safety with respect to protection from "chronic and possible accidental releases of radioactivity."

Table (4-1) of the Report on the Bruce Generating Station deals with manpower requirements and each of the reports has a short section (6.4.5) on the labour market impact of the project. As you are aware, the construction work on the project will be under way at the same time as that on a

substantial number of major developments to be undertaken from now to the end of this decade. Because there are some concerns about the availability of labour for carrying out these developments a considerable amount of work has been done in this Ministry on the demand for and supply of manpower. Accordingly, I think you might be interested in talking to one or two of the people in this Branch who have been involved in this work, particularly with Mr. Mike Skolnik. You can reach him at 965-6101.

Much of the report deals with concerns that lie outside our areas of competence but we hope the comments made above will be useful to you.

Yours truly,



J. R. Kinley
Director

Research Branch
400 University Avenue
Toronto, Ontario
M7A 1T8

965-6101

JRK:lm



Ontario

Ministry of
Agriculture
and Food

416/965- 7661

Parliament Buildings
Queen's Park
Toronto Ontario

April 11, 1974

Mr. D.M. Hayter,
Project Study Co-ordinator,
General Projects Division,
Ontario Hydro,
620 University Avenue,
Toronto, Ontario. M5G 1X6

Your File: NK29-0000 P

Dear Mr. Hayter:

Your letter of April 4, 1974 directed to various persons in our Ministry concerning Bruce Generating Station B and Heavy Water Plants B, C and D has been referred to me for reply.

The concerns of the Ministry of Agriculture and Food regarding the proposed expansion of the Bruce facilities may be outlined as follows:

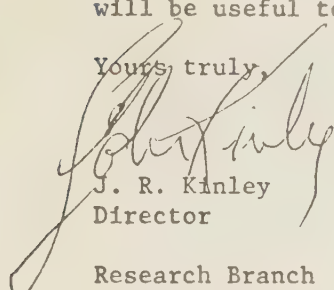
1. Urban expansion - We are not concerned so much with the actual expansion of the Bruce facilities as we are with the increased urban development that probably will occur around the towns near the generating station. This development will often occur on Class I and II agricultural land because these land classes are predominant in the area. We are also wondering if there is any possibility of Ontario Hydro becoming involved in the development of new town sites in the area. If there is, we hope every effort will be made to locate these on Class III, IV or V agricultural land. We would appreciate hearing from you concerning any methods you think Ontario Hydro and/or the Ministry of Agriculture and Food might use to confine future urban development to the lower classes of agricultural land.
2. Hydro transmission lines - Of much more concern to farmers than the expansion at Bruce Station is the increase in number of transmission lines and width of corridors that will result from the expansion. A relatively large block of Class I and II agricultural land is located to the east of the generating station, making it very difficult to run power corridors out from the station without causing considerable impact on large areas of prime agricultural land. Ontario Hydro does not appear to be giving enough consideration to the impact of transmission lines on prime agricultural lands when deciding

...2/

substantial number of major developments to be undertaken from now to the end of this decade. Because there are some concerns about the availability of labour for carrying out these developments a considerable amount of work has been done in this Ministry on the demand for and supply of manpower. Accordingly, I think you might be interested in talking to one or two of the people in this Branch who have been involved in this work, particularly with Mr. Mike Skolnik. You can reach him at 965-6101.

Much of the report deals with concerns that lie outside our areas of competence but we hope the comments made above will be useful to you.

Yours truly,



J. R. Kinley
Director

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400 University Avenue
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965-6101

JRK:lm



Ontario

Ministry of
Industry and
Tourism

416/965- 4024
Cable Address
Tradin-Toronto

900 Bay Street
Hearst Block
Queen's Park
Toronto, Ontario
Canada
M7A 1S6

April 16, 1974.

Our file number 5251

Mr. D.M. Hayter,
Project Study Co-ordinator,
Generation Projects Division,
Ontario Hydro,
620 University Avenue,
Toronto, Ontario.
M5G 1X6

Re: Bruce Benerating Station B and Bruce Heavy Water
Plants B, C and D.

Dear Mr. Hayter:

Your letter dated April 4th, addressed to Mr. F. J. Boyer,
Executive Director, Division of Tourism, requesting
commentary on the above-noted proposals, has been forwarded
to this office for acknowledgement.

We have already been in contact with Mr. D. White, Public Relations
Hydro, regarding your report and the pending community impact
study. In terms of the primary interest of the Tourism
Division, the existing plant and the expanded facilities
will act as a significant local attraction for tourists.
The attached memo from Mr. Hunter details the positive
value of the expanded facilities at the Bruce Nuclear
Power Development as an important area attraction.

In more general terms, we consider that the expansion will
have direct impact on the tourism enterprises in the
individual communities - particularly in the short term,
construction stages. The Ministry's field office in Owen
Sound reports some impact already:

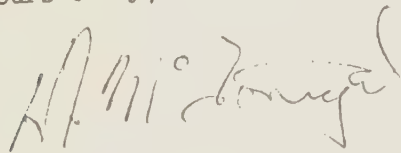
"The influx of Ontario Hydro workers into the
Southern Bruce area has caused some changes in the
tourist accommodation sector. An appreciable

...../2

number of tourist establishments are catering to the workers, especially moderate quality motels and housekeeping cottages. It was our hope that these establishments would cater to the workers from November to April and then return to tourism during the summer months. However, economics seem to dictate that a year round rental to workers is preferable to the operator, and is certainly easier. We see little chance of this trend reversing itself in the near future."

Should you require any further details, please do not hesitate to contact this office at your convenience.

Yours truly,



H. J. McGonigal,
Director,
Tourism & Service Industries
Development Branch.

HJMc/tt
Encls.

c.c. : Mr. F. J. Boyer,
Executive Director,
Division of Tourism.



Ontario

Ministry of
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April 5, 1974.

Our file number, 5251

Memorandum to: Mr. H. J. McGonigal,
Director,
Tourism & Service Industries
Development Branch.

Subject: Proposed Expansion of
Facilities at the Bruce
Nuclear Power Development.

I discussed the Bruce Nuclear Power Development and the "community impact study" with Mr. D. White, Public Relations, Ontario Hydro on-site office and Laurie Catherall of the Ministry's Owen Sound office.

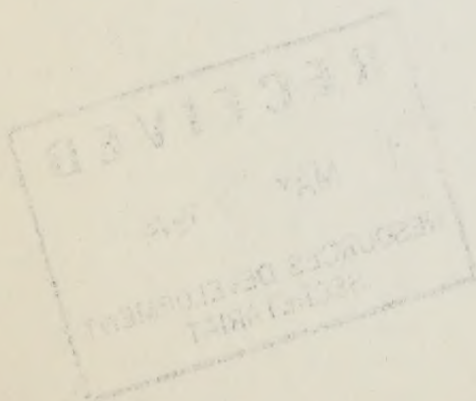
- (1) The Douglas Point Nuclear Power Station has attracted 450,000 visitors since its initial year of development in 1960.
- (2) Annual attendance is usually between 40,000 and 50,000.
- (3) Organized groups (school children) represent 4,000 - 5,000 visitors each year.
- (4) Ontario Hydro operates a tour every 40 minutes on weekdays and every 20 minutes on weekends from June 1st to mid-September.
- (5) The tour (1 1/4 hours) includes a visit to an information centre, film, exhibits, bus ride, etc.
- (6) Tours can be arranged by reservation during the off-season.
- (7) The tour is the only major man-made attraction in this area.

- (8) The tour acts as a popular diversion for tourists during periods of inclement weather. Daily attendance is consistently higher during days of rain, etc. than pleasant days.
- (9) Mr. White is in the process of developing a long range tour program.
 - Ontario Hydro will be increasing its promotional efforts (emphasis will be on making people more aware of the operation of a nuclear power station than on attracting more visitors).
- (10) The "community impact study" is being undertaken for Ontario Hydro by M. M. Dillon consultants.
 - Mr. White will forward a copy of the study to us when it is completed (mid-summer 1974).
- (11) Laurie Catherall reports (see attached report) that several tourist establishments are catering to "project workers" on a year-round basis.

W. A. Hunter

W. A. Hunter,
Planning & Liaison Officer,
Tourism & Service Industries
Development Branch.

WAH/pb



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